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**UNITED STATES DISTRICT COURT**  
**CENTRAL DISTRICT OF CALIFORNIA**

ENTROPIC COMMUNICATIONS, LLC,  
  
Plaintiff,  
  
v.  
  
COX COMMUNICATIONS, INC., *et al.*,  
  
Defendants.

Case No. 2:23-cv-1049-JWH-KES  
(Lead Case)  
Case No. 2:23-cv-1050-JWH-KES  
(Related Case)

**~~CORRECTED~~**  
**~~SECOND~~PROPOSED THIRD**  
**AMENDED COMPLAINT FOR  
PATENT INFRINGEMENT FOR  
CASE NO. 2:23-cv-1049-JWH-KES**

ENTROPIC COMMUNICATIONS, LLC,  
  
Plaintiff,  
  
v.  
  
COMCAST CORPORATION, *et al.*,  
  
Defendants.

**DEMAND FOR JURY TRIAL**

1 Plaintiff, Entropic Communications, LLC (“Entropic”), files this complaint for  
2 patent infringement against Comcast Corporation (“Comcast Corp.”); Comcast Cable  
3 Communications, LLC (“Comcast Communications”); and Comcast Cable  
4 Communications Management, LLC (“Comcast Management”) (collectively  
5 “Comcast”) and in support thereof alleges as follows:

6 1. This is a civil action arising under the patent laws of the United States,  
7 35 U.S.C. § 1 *et seq.*, including specifically 35 U.S.C. § 271, based on Comcast’s  
8 infringement of U.S. Patent Nos. 8,223,775 (the “775 Patent”), 8,284,690 (the  
9 “690 Patent”), 8,792,008 (the “008 Patent”), 9,210,362 (the “362 Patent”),  
10 9,825,826 (the “826 Patent”), 10,135,682 (the “682 Patent”), 11,381,866 (the “866  
11 Patent”), ~~and~~ 11,399,206 (the “206 Patent”), 11,785,275 (the “275 Patent”), and  
12 9,866,438 (the “438 Patent”) (collectively, the “Patents-in-Suit”).

### 13 THE PARTIES

14 2. Entropic is a Delaware limited liability company with an office at  
15 7150 Preston Road, Suite 300, Plano, Texas 75024.

16 3. Entropic is the owner by assignment to all right, title, and interest to the  
17 Patents-in-Suit. Entropic is the successor-in-interest of the Patents-in-Suit.

18 4. Upon information and belief, Comcast Corp. is a corporation organized  
19 and existing under the laws of Pennsylvania, with a principal place of business at  
20 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.

21 5. Comcast Corp. has, as its registered agent in California, CT Corporation  
22 System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

23 6. Comcast Corp., along with the other defendants, develops, markets, sells,  
24 offers for sale and/or provides “Comcast” and “Xfinity” branded cable television  
25 services and equipment to customers.

26 7. Comcast Communications is a limited liability company organized and  
27 existing under the laws of Delaware, with a principal place of business at 1701 JFK  
28

1 Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast  
2 Communications is a subsidiary of Comcast Corp.

3 8. Comcast Communications has, as its registered agent in California,  
4 CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

5 9. Comcast Communications, along with the other defendants, develops,  
6 markets, sells, offers for sale and/or provides “Comcast” and “Xfinity” branded cable  
7 television services and equipment to customers.

8 10. Comcast Management is a limited liability company organized and  
9 existing under the laws of Delaware, with a principal place of business at 1701 JFK  
10 Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast  
11 Management is a subsidiary of Comcast Corp.

12 11. Comcast Management has, as its registered agent in California, CT  
13 Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

14 12. Comcast Management, along with the other defendants, develops,  
15 markets, sells, offers for sale and/or provides “Comcast” and “Xfinity” branded cable  
16 television services and equipment to customers.

17 13. Comcast Corp. and/or Comcast Communications owns or leases, and  
18 maintains and operates, several stores in this district by and through subsidiary limited  
19 liability companies that they own, manage, and control, including Comcast of Santa  
20 Maria, LLC and Comcast of Lompoc LLC. Upon information and belief, Comcast  
21 Corp. and/or Comcast Communications (and/or other personnel employed by them)  
22 negotiates and signs agreements on behalf of each of these entities.

23 14. Upon information and belief, Comcast Corp. and/or Comcast  
24 Communications are the corporate managers of their subsidiary LLCs that own or  
25 lease property in this district, and that own, store, sell, demonstrate, and lease  
26 equipment in this district. Comcast Corp. and/or Comcast Communications have the  
27 right to exercise near total control of each entity’s operations through its LLC  
28 agreements with each entity.

1           15. In each of those stores, Comcast Corp. and/or Comcast Communications  
2 owns and stores equipment such as cable modems and set top boxes (“STBs”),  
3 including the Accused Cable Modem Products (defined below), Accused Set Top  
4 Products (defined below) and demonstrates the Accused Services (defined below)  
5 provided via those products to Comcast customers by and through subsidiary limited  
6 liability companies that it manages and controls.

7           16. Upon information and belief, Comcast Corp. and/or Comcast  
8 Communications employs personnel that install, service, repair and/or replace  
9 equipment, as appropriate, in this district by and through subsidiary limited liability  
10 companies that it manages and controls.

11           17. Upon information and belief, Comcast Corp. and/or Comcast  
12 Communications have two wholly owned subsidiaries in this Judicial District of  
13 Central California (“District”) that serve as their agents.

14           18. Comcast of Santa Maria, LLC (“Comcast Santa Maria”) is a limited  
15 liability company organized and existing under the laws of Pennsylvania, with a  
16 principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.  
17 Comcast Santa Maria is a subsidiary of Comcast Corp.

18           19. Comcast Santa Maria, along with the other defendants, markets, sells,  
19 offers for sale and/or provides “Comcast” and “Xfinity” branded cable television  
20 services and equipment to customers.

21           20. Comcast of Lompoc, LLC (“Comcast Lompoc”) is a limited liability  
22 company organized and existing under the laws of Pennsylvania, with a principal  
23 place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103. Comcast  
24 Lompoc is a subsidiary of Comcast Corp.

25           21. Comcast Lompoc, along with the other defendants, markets, sells, offers  
26 for sale and/or provides “Comcast” and “Xfinity” branded cable television services  
27 and equipment to customers.

1        22. Upon information and belief, Comcast Communications, Comcast,  
2 Management, Comcast Santa Maria, and Comcast Lompoc are the agents of Comcast  
3 Corp. Upon information and belief, Comcast Corp. has complete and total control  
4 over its agents Comcast Communications, Comcast Management, Comcast Santa  
5 Maria, and Comcast Lompoc. On information and belief, Comcast Corp. shares  
6 management, common ownership, advertising platforms, facilities, distribution chains  
7 and platforms, stores, and accused product lines and products involving related  
8 technologies with its agents, including at least Comcast Communications, Comcast  
9 Management, Comcast Santa Maria, and Comcast Lompoc.

10        23. For example, Comcast Corp., Comcast Communications, Comcast  
11 Management, Comcast Santa Maria, and Comcast Lompoc all have the same principal  
12 place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.

13        24. The Comcast “Xfinity Residential Services Agreement” purports to bind  
14 Comcast’s customers, including those customers in this District, to an agreement with  
15 Comcast Communications for, *inter alia*, the Accused Services that Comcast’s  
16 customers receive through the infringing use of the Accused Cable Modem Products  
17 and the Accused Set Top Products.<sup>1</sup> This agreement further provides that an entity  
18 other than Comcast Communications provides the services. Upon information and  
19 belief, the entity that provides the services to Comcast’s customers and subscribers is  
20 Comcast Management.

21        25. Comcast Management further shares a leadership team with Comcast  
22 Corp.<sup>2</sup> For example, Brian Roberts is the Chairman and Chief Executive Officer of

23 <sup>1</sup> <https://www.xfinity.com/Corporate/Customers/Policies/SubscriberAgreement>.

24 <sup>2</sup> Compare names found in Exhibit A to the attached  
25 [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/do](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf)  
26 [cuments/video-franchising-and-broadband-analysis/video-franchising-main/applicatio](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf)  
27 [ns-received--by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf)  
28 with the bios of the identified personnel at Comcast’s corporate leadership website, <https://corporate.comcast.com/company/leadership>.

1 both Comcast Management and Comcast Corp.; Daniel Murdock is Executive Vice  
2 President and Chief Accounting Officer of both Comcast Corp. and Comcast  
3 Management; Francis Buono is Executive Vice President of Legal Regulatory Affairs  
4 and Senior Deputy General Counsel of both Comcast Corp. and Comcast  
5 Management; and Karen Buchholz is Executive Vice President, Administration of  
6 both Comcast Corp. and Comcast Management.

7 **PRE-SUIT DISCUSSIONS**

8 26. Prior to filing this Complaint, Entropic sent a communication by physical  
9 means to Comcast on August 9, 2022, in an attempt to engage Comcast and/or its  
10 agents in good faith licensing discussions regarding Entropic's patent portfolio,  
11 including the Patents-in-Suit.<sup>3</sup> Comcast replied to the communication on October 10,  
12 2022, asking for additional information. On December 23, 2022, Entropic sent  
13 Comcast another communication regarding a separate license to Entropic's patents for  
14 the field of the standardized networking technology commonly called MoCA, and also  
15 seeking to discuss with Comcast a typical non-disclosure agreement in order to share  
16 such information.

17 **ENTROPIC'S LEGACY AS A CABLE INNOVATOR**

18 27. Entropic Communications Inc. ("Entropic Inc."), the  
19 predecessor-in-interest to Plaintiff Entropic as to the Patents-in-Suit, was founded in  
20 San Diego, California in 2001 by Dr. Anton Monk, Itzhak Gurantz, Ladd El Wardani  
21 and others. Entropic Inc. was exclusively responsible for the development of the  
22 initial versions of the Multimedia over Coax Alliance ("MoCA") standards, including  
23 MoCA 1.0, ratified in 2006 and MoCA 1.1, ratified in 2007, and was instrumental in  
24 the development of MoCA 2.0, ratified in 2010. It also developed Direct Broadcast  
25 Satellite ("DBS") Outdoor Unit ("ODU") single wire technology and System-on-Chip  
26

27 <sup>3</sup> The '206 Patent was not included in the list of issued Entropic patents discussed in  
28 the communication sent on August 9, 2022.



1 (“SoC”) solutions STBs in the home television and home video markets. Entropic was  
2 widely known in the cable industry for these innovations and its foundational  
3 development of MoCA.

4 28. Under the technical guidance of Dr. Monk, Entropic Inc. grew to be  
5 publicly listed on the NASDAQ in 2007. After the public listing, the company  
6 acquired RF Magic, Inc. in 2007, a company specializing in DBS ODU technology  
7 and related hardware.

8 29. Additional growth between 2007 and 2015 bolstered the technical  
9 expertise of Entropic Inc. with respect to signal acquisition, stacking, filtering,  
10 processing, and distribution for STBs and cable modems.

11 30. For years, Entropic Inc. pioneered innovative networking technologies,  
12 as well as television and internet-related technologies. These technologies simplified  
13 the installation required to support wideband reception of multiple channels for  
14 demodulation, improved home internet performance, and enabled more efficient and  
15 responsive troubleshooting and upstream signal management for cable providers.  
16 These innovations represented significant advances in the field, simplified the  
17 implementation of those advances, and reduced expenses for providers and customers  
18 alike.

19 **MAXLINEAR’S TRANSFER OF PATENTS TO ENTROPIC**

20 31. In 2015, MaxLinear, Inc. and MaxLinear, LLC (collectively,  
21 “MaxLinear”)—leading providers of radio-frequency, analog, digital, and  
22 mixed-signal semiconductor solutions—acquired Entropic Inc., as well as the  
23 pioneering intellectual property developed by Dr. Monk and his team.

24 32. Plaintiff Entropic was established in 2021 [REDACTED]  
25 [REDACTED]  
26 [REDACTED]  
27 [REDACTED]  
28 [REDACTED]

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3 33. [REDACTED]  
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8 35. [REDACTED]  
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11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 36. [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 37. Entropic has the full right to pursue the patent infringement claims  
18 asserted in this action against Comcast.  
19 A. [REDACTED]  
20 [REDACTED]  
21 38. [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
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26 4 [REDACTED]  
27 [REDACTED]  
28 5 [REDACTED]



1 39. [REDACTED]  
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1 60. [REDACTED]

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4 61. [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 62. [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 63. [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 64. [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 65. [REDACTED]

25 [REDACTED]

26 [REDACTED]

27 66. [REDACTED]

28 [REDACTED]

**B. Comcast Has, and Continues, to Willfully and Intentionally Infringe the Patents-in-Suit**

67. The Patents-in-Suit are the result of years of research and development in satellite and cable technology. These innovations are utilized by Comcast to provide enhanced and expanded services to customers, which in turn has increased revenues for Comcast while at the same time reducing costs.

68. Comcast invested in Entropic Inc. once in 2003, and again in 2006.

69. Upon information and belief, Comcast substantively reviewed and analyzed Entropic Inc.'s patents and patent applications related to the Patents-in-Suit as part of its due diligence prior to investing in Entropic Inc.

70. In addition, Comcast has willfully infringed the Patents-in-Suit in at least the following ways.

**1. The Charter Suits**

71. On information and belief, Comcast had knowledge of its infringement of certain of the Patents-in-Suit based on its awareness of the patent infringement suit filed by Entropic against Charter Communications, Inc. ("Charter") in the Eastern District of Texas, Case No. 2:22-CV-00125-JRG, on April 27, 2022. This suit against Charter asserted the '775 Patent, the '690 Patent, the '008 Patent, the '362 Patent, the '826 Patent, and the '682 Patent against Charter's provision of cable television and internet services, cable modem products and STBs.

72. On information and belief, Comcast had knowledge of its infringement of certain of the Patents-in-Suit based on its awareness of the patent infringement suit filed by Entropic against Charter in the Eastern District of Texas, Case No. 2:23-CV-00052-JRG, on February 10, 2023. This second suit against Charter asserted the '866 Patent and the '206 Patent against Charter's provision of cable television and

1 internet services, cable modem products and STBs. The complaint was amended on  
2 October 31, 2023, to assert the '275 Patent and '438 Patent against Charter.

3 73. Both Charter and Comcast are part of the close-knit business community  
4 that is the cable industry, which is led by key industry players. These key players  
5 work collaboratively to develop new technology and programs to drive the industry  
6 forward, including through organizations like MoCA and the Society of Cable  
7 Telecommunications Engineers.

8 74. Comcast and Charter actively collaborate together, have monthly  
9 meetings across various departments, and have even collaborated together on accused  
10 technologies. Specifically, Comcast and Charter have collaborated together on Profile  
11 Management Application ("PMA") technology and the implementation of full band  
12 capture.

13 75. Comcast's PMA implementation infringes the '682 Patent in  
14 substantially the same manner as Charter's PMA implementation. Given the amount  
15 of collaboration that occurs between Charter and Comcast, Comcast was aware of the  
16 accusations against Charter's PMA implementation.

17 76. Comcast's implementation of remote spectrum monitoring functionality  
18 in its Proactive Network Maintenance ("PNM") system infringes the '008 and '826  
19 Patents in substantially the same manner as Charter's implementation of remote  
20 spectrum monitoring in its PNM system. Given the amount of collaboration that  
21 occurs between Charter and Comcast, Comcast was aware of the accusations against  
22 Charter's implementation of remote spectrum monitoring in its PNM system.  
23 Additionally, Comcast collects information regarding the upstream channels as part of  
24 the operation of its network, in a similar manner as Charter. This collection of  
25 information regarding the upstream channels as part of the operation of a cable  
26 network infringes the '690 Patent.

27 77. Comcast's usage of full band capture-enabled cable modems and STBs  
28 infringes the '362, '866, ~~and~~ '206 and '275 Patents in substantially the same manner

1 as Charter's usage of full band capture-enabled cable modems and STBs. Given the  
2 amount of collaboration that occurs between Charter, Comcast and its common  
3 supplied of the cable modems, STBs and underlying full band capture  
4 system-on-chips (or SoCs), Comcast was aware of the accusations against Charter's  
5 usage of full band capture-enabled cable modems and STBs.

6 78. Comcast uses cable modem termination system ("CMTS") hardware and  
7 software as part of its cable network.

8 79. Comcast and Charter also collaborate together at events for the Society of  
9 Cable Telecommunications Engineers ("SCTE"), of which both Comcast and Charter  
10 are members. Among other things, Comcast and Charter participate in panels together,  
11 share data and achievements related to SCTE, and work on peer-reviewed papers  
12 together.

13 80. Charter and Comcast also "team up" to offer streaming devices and other  
14 technology to customers. Indeed, The New York Times published an article about  
15 such a joint venture between Comcast and Charter on April 27, 2022, the very same  
16 day that the first suit against Charter was filed.

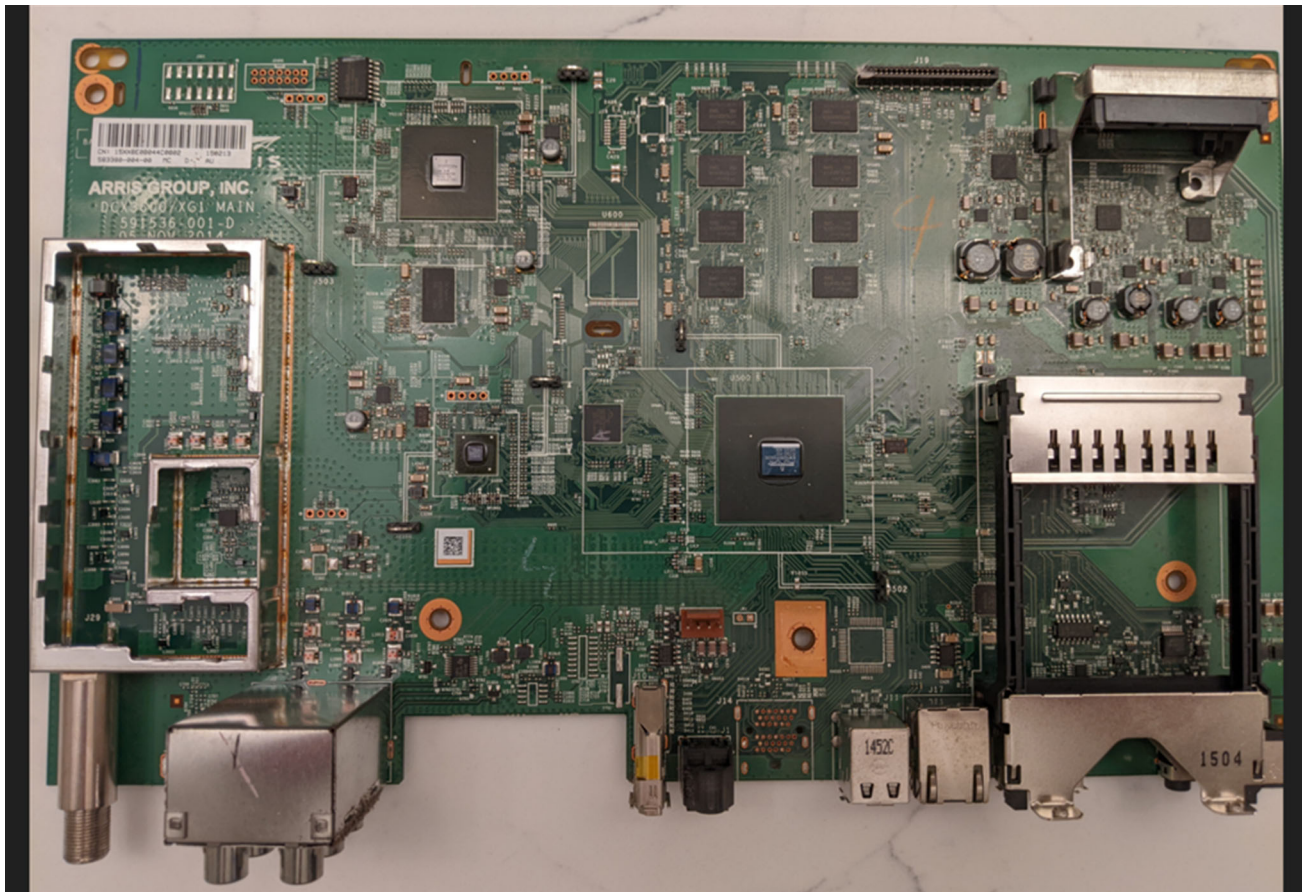
17 81. As evidenced by this article, Comcast knows that Charter utilizes  
18 technology that functions almost identically to Comcast's technology.

19 82. Among other things, Charter and Comcast utilize similar product  
20 offerings that incorporate the same technologies. Charter and Comcast purchase their  
21 products, including cable modems, STBs, and CMTS hardware and software, from the  
22 same third parties. These products utilize the same or similar SoCs and other  
23 processors and provide similar functionality. For example, both Charter and Comcast  
24 provide whole-home DVR solutions utilizing MoCA to create an in-home network  
25 over the on-premises coaxial cabling. Similarly, both Charter and Comcast utilize  
26 cable modems having Broadcom BCM3390 SoCs and STBs utilizing a combination  
27 of Broadcom full-band capture SoCs to interface with the cable network and STB  
28 SoCs to decode and display television content.



83. For example, one supplier of STBs, Arris, provides the DCX3600 to both Comcast and Charter. Comcast refers to the Arris DCX3600 as the Arris MX011ANM or XG1-A, and Charter refers to it simply as the Arris DCX3600. An image of the circuit board included in the Arris DCX3600 is shown below, clearly showing both the DCX3600 and XG1 branding:

84. The two Charter suits discussed herein asserted the same patents and



involved largely the same technology as is at issue in this action.

85. Given the close business relationship between Comcast and Charter, as well as the joint ventures that Comcast was pursuing with Charter when these suits were filed against Charter, Comcast was almost certainly aware of their filings.

86. Upon information and belief, and based on Comcast's awareness of the substantial similarities between Comcast's and Charter's technology and products,

1 Comcast analyzed the claims asserted against Charter, the Patents-in-Suit, and the  
2 Accused Products.

3 87. Upon information and belief, Comcast then analyzed its own products'  
4 functionality in light of the patents asserted against Charter, and it confirmed that its  
5 own products were functionally identical to the Charter products accused.

6 88. Upon information and belief, Comcast monitored the ongoing  
7 prosecution of the '362 Patent family, and therefore was aware of the U.S. Patent No.  
8 11,381,866 (the "'866 Patent") issued on July 5, 2022, and U.S. Patent No.  
9 11,399,206 (the "'206 Patent") issued on July 26, 2022.

10 89. Upon information and belief, Comcast analyzed its products'  
11 functionality in light of the '866 Patent.

12 90. Upon information and belief, Comcast analyzed its products'  
13 functionality in light of the '206 Patent.

14 91. Upon information and belief, Comcast thereafter determined that its  
15 products infringe the Patents-in-Suit in substantially the same manner as Charter.

16 92. Nevertheless, Comcast continued to make, sell, or offer for sell the  
17 infringing products.

18 93. Upon information and belief, Comcast requested indemnification from  
19 Comcast's suppliers for each of the patents asserted against Charter, including the  
20 MoCA-related patents, prior to Entropic filing the current action.

21 94. Comcast's request for indemnification evidences its knowledge of the  
22 risk that it infringed at least Entropic's Non-SEP Patents, and that a suit similar to the  
23 Charter Suit was likely to be initiated against Comcast.

## 24 **2. The DISH and DirecTV Suits**

25 95. Entropic filed a patent infringement suit against Dish Network  
26 Corporation, DISH Network, LLC, and Dish Network Service, LLC (collectively,  
27 "Dish") in the Eastern District of Texas, Case No. 2:22-CV-00076, on March 9, 2022,  
28

1 asserting infringement of three Entropic patents, including the '008 Patent (the "Dish  
2 Suit").

3 96. Entropic filed a patent infringement suit against DirecTV, LLC, AT&T,  
4 Inc., AT&T Services, Inc., and AT&T Communications, LLC in the Eastern District  
5 of Texas, Case No. 2:22-CV-00075 on March 9, 2022, asserting infringement of three  
6 Entropic patents, including the '008 Patent (the "DirecTV Suit").

7 97. Upon information and belief, Comcast contacted RPX Corporation  
8 ("RPX") regarding the Charter Suit, Dish Suit, and DirecTV Suit after being served  
9 with the complaint in these actions. Either before or shortly after its discussions with  
10 RPX, Comcast substantively reviewed and analyzed the patents asserted in the Charter  
11 Suit, Dish Suit, and DirecTV Suit.

### 12 **3. Comcast's Relationship with MaxLinear**

13 98. Comcast has willfully infringed the Patents-in-Suit based on knowledge  
14 it gained from Patrick Tierney. Tierney, one of the named inventors of the '008  
15 Patent and '826 Patent, now works at Comcast. Accordingly, upon information and  
16 belief, Comcast knew of the aforementioned Patents-in-Suit as early as the day Patrick  
17 Tierney was hired. For example, upon information and belief, Comcast looked at  
18 patents which named Patrick Tierney as an inventor as part of the process of  
19 determining whether to offer him employment at Comcast.

20 99. Patrick Tierney and other MaxLinear employees frequently met with  
21 Comcast and discussed the technologies of both MaxLinear and Entropic Inc. that  
22 practiced the Patents-in-Suit. Thus, Patrick Tierney was well aware of the technology  
23 and functionality of the Patents-in-Suit.

24 100. Indeed, before his employment at Comcast, Patrick Tierney often met  
25 with Comcast personnel to discuss new technology for which MaxLinear and Entropic  
26 Inc. had recently applied for or received patent protection.

1           101. For example, Patrick Tierney met with Sam Chernak of Comcast on  
2 December 20, 2012, less than a month after the '566 Patent issued. Upon information  
3 and belief, Mr. Tierney told Mr. Chernak about the '566 Patent.

4           102. As another example, Comcast met with MaxLinear to ask MaxLinear to  
5 support a low cost D3 modem on January 20, 2013, less than a month after the '681  
6 Patent issued.

7           103. In his role at Comcast, on information and belief, Patrick Tierney shared  
8 what he knew about the functionality and operation of the Patents-in-Suit with other  
9 Comcast personnel, so that Comcast could continue to create products that infringe  
10 upon the Patents-in-Suit.

11           104. Comcast also learned about the functionality of the Patents-in-Suit  
12 through other events it attended, including the 2015 International Broadcasting  
13 Convention, where MaxLinear presented information about new products and  
14 technology that implemented the Patents-in-Suit.

15           105. MaxLinear also held several business discussions with Comcast in 2015,  
16 wherein MaxLinear discussed its products and technology that implemented the  
17 Patents-in-Suit and explained how that technology could benefit Comcast's business.

18           106. Specifically, MaxLinear gave a presentation to Comcast in March 2015  
19 wherein it discussed confidential, new technology being developed by MaxLinear and  
20 Entropic Inc. MaxLinear's March 2015 presentation specifically referenced that  
21 much of this technology was covered by "[a]lmost 2000 issued and pending patents."

22           107. Finally, Comcast has been willfully infringing since at least October  
23 2021, when it intentionally misappropriated MaxLinear's technology and related  
24 patents by disclosing that information to MaxLinear's competitor.

25           108. In 2020, Comcast began pursuing full duplex ("FDX") technology to  
26 implement DOCSIS 4.0, which was intended to enable higher speeds for both  
27 downstream and upstream communications.

1           109. However, Comcast soon realized that the only then-viable FDX  
2 architecture could not be deployed to serve the majority of Comcast's network.

3           110. Comcast turned to MaxLinear to solve this problem, as MaxLinear was a  
4 well-known innovator in the FDX space. Indeed, since at least 2016, Comcast itself  
5 acknowledged that MaxLinear was the only company able to deliver viable FDX  
6 technology.

7           111. In 2020, after entering into a non-disclosure agreement, MaxLinear  
8 shared its confidential FDX technologies with Comcast in the hopes of expanding  
9 their business relationship.

10           112. On information and belief, Comcast knew that MaxLinear's disclosures  
11 regarding the FDX technology were confidential and were owned by MaxLinear,  
12 including by virtue of the non-disclosure agreement signed by Comcast, as well as the  
13 confidentiality designations MaxLinear marked its FDX disclosures with.

14           113. On information and belief, in October 2021, Comcast nevertheless took  
15 credit for MaxLinear's technology in a published article. *See* Elad Nafshi,  
16 *Announcing Another 10G Milestone Amidst a Flurry of Innovation*, Comcast (Oct. 14,  
17 2021), <https://tinyurl.com/yphyu6a9>.

18           114. In September 2022, Richard Prodan, one of the Comcast employees who  
19 attended and received copies of MaxLinear's confidential presentation on the design  
20 of its FDX-amplifier solution, published an industry paper that described an  
21 FDX-amplifier design that was materially identical to the one MaxLinear developed  
22 and confidentially shared with Comcast.

23           115. On information and belief, Comcast was aware that its use of  
24 MaxLinear's FDX technology misappropriated MaxLinear's trade secrets, including  
25 based on the parties' prior business dealings, the NDA, and based on the recent  
26 counterclaims filed by MaxLinear against Comcast on December 1, 2023 in the  
27 United States District Court for the Southern District of New York, *Comcast Cable*  
28



1 *Communications LLC, et al. v. MaxLinear, Inc.*, Case No. 1:23-cv-04436-AKH (DE  
2 88).

3 **4. Comcast's Willful Infringement of Specific Patents-in-Suit**

4 116. Upon information and belief, Comcast substantively reviewed and  
5 analyzed Entropic's U.S. Patent No. 8,223,775 (the "'775 Patent"), duly issued on  
6 July 17, 2012 from an application filed September 30, 2003, as part of its due  
7 diligence prior to investing in Entropic in 2006.

8 117. Accordingly, upon information and belief, no later than the day prior to  
9 its latest investment in Entropic in 2006, Comcast knew or had every reason to know  
10 that Entropic owned the '775 Patent. Because Comcast knew of the '775 Patent and  
11 substantively reviewed its claims, Comcast began willfully infringing the '775 Patent  
12 no later than the dates it began offering its cable modem products and services, having  
13 knowledge that such use and deployment infringed the '775 Patent.

14 118. As addressed above, Comcast has willfully infringed at least the '362  
15 patent, the '826 patent, and the '206 patent through its knowledge gained from the  
16 Charter litigation, and was aware of (and substantively analyzed its infringement of)  
17 the other Patents-in-Suit no later than the letter sent by Entropic in August 2022.

18 119. Comcast has also willfully infringed at least the '682 Patent as evidenced  
19 by its own patents that cite to U.S. Patent No. 9,419,858 (the '858 Patent"), which is  
20 the ultimate parent of the '682 Patent. Specifically, Comcast's patents including U.S.  
21 Patent No. 11,191,087; U.S. Patent No. 10,582,515; U.S. Patent No. 11,758,574 cite  
22 the '858 Patent.

23 120. Comcast's reference to the '858 Patent, which is closely related to and  
24 involves similar technology and functionality as the '682 Patent, evidences Comcast's  
25 awareness that it infringes upon '682 Patent.

26 121. Further, Comcast filed an application for U.S. Patent No. 9,178,765 on  
27 July 23, 2013, in the same month that the application for the '682 Patent was filed.  
28 On information and belief, Comcast was aware of the '682 Patent based on the

1 investigation it undertook during the application and prosecution process for U.S.  
2 Patent No. 9,178,765. Thus, Comcast has willfully infringed the '682 Patent since at  
3 least July 23, 2013.

4 122. Accordingly, Comcast either knew about the Patents-in-Suit, or  
5 alternatively engaged in a scheme to be willfully blind to the existence of the  
6 Patents-in-Suit.

7 **C. Comcast Willfully Infringed, and Continues to Infringe, Entropic's MoCA**  
8 **Patents<sup>7</sup>**

9 123. Comcast invested in Entropic Inc. once in 2003, and again in 2006.

10 124. Upon information and belief, Comcast substantively reviewed and  
11 analyzed Entropic Inc.'s patents and patent applications related to the Entropic Inc.'s  
12 MoCA standard patents as part of its due diligence prior to investing in Entropic Inc.

13 125. Upon information and belief, the patents and patent applications that  
14 Comcast analyzed prior to investing in Entropic include at least the following patents:  
15 U.S. Patent No. 7,295,518 (the "'518 Patent"), duly issued on November 13, 2007  
16 from an application filed December 18, 2002, an application filed August 19, 2002  
17 and, *inter alia*, a provisional application filed August 30, 2001; U.S. Patent No.  
18 7,594,249, duly issued on September 22, 2009 from an application filed July 21, 2001,  
19 and a provisional application filed May 4, 2001; U.S. Patent No. 7,889,759 (the  
20 "'759 Patent"), duly issued on February 15, 2011 from an application filed July 12,  
21 2004, an application filed August 29, 2002, and, *inter alia* a provisional application  
22 filed August 30, 2001; U.S. Patent No. 8,085,802, duly issued on December 27, 2011  
23 from an application filed December 2, 2005, and a provisional application filed  
24 December 2, 2004; U.S. Patent No. 8,631,450, duly issued on January 14, 2014, from  
25 an application filed September 19, 2005 and, *inter alia*, a provisional application filed  
26

27 <sup>7</sup> The MoCA Patents are set forth in Entropic's concurrently filed action, *Entropic v.*  
28 *Comcast, et al.*, Case No. 2:23-cv-1048-JWH-KES (C.D. Cal. 2023).



1 December 2, 2004; U.S. Patent No. 8,621,539, duly issued on December 31, 2013  
2 from an application filed September 29, 2005 and, *inter alia*, a provisional application  
3 filed December 2, 2004; U.S. Patent No. 10,257,566, duly issued on April 9, 2019  
4 from an application filed February 7, 2017, an application filed September 19, 2005,  
5 and *inter alia*, a provisional application filed December 2, 2004 (collectively, the  
6 “Pre-Investment MoCA Patents”). On information and belief, Comcast knew, based  
7 on its own analysis and also potentially statements from Entropic itself, that these  
8 patents were standard-essential to MoCA, such that practicing the MoCA standard  
9 would infringe these patents.

10 126. Upon information and belief, no later than the day prior to its latest  
11 investment in Entropic in 2006, Comcast knew or had every reason to know that  
12 Entropic owned the Pre-Investment MoCA Patents related to the MoCA technology  
13 such that deployment of MoCA standard-compliant devices would infringe patents  
14 owned by Entropic.

15 127. Upon information and belief, no later than the day prior to its latest  
16 investment in Entropic in 2006, any reasonable commercial party in Comcast’s  
17 position, with Comcast’s knowledge, would know that deployment of MoCA  
18 standard-compliant devices would infringe on the Pre-Investment MoCA Patents  
19 owned by Entropic. On information and belief, Comcast continued to monitor and  
20 analyze Entropic’s MoCA-related patents and was aware of later-filed patents that are  
21 standard-essential to MoCA simply due to the importance of MoCA to Comcast’s  
22 business and Comcast’s later involvement as a board member of MoCA.

23 128. No later than 2010 and continuing to the present, Comcast has used  
24 products that provide signals, programming and content utilizing a data connection  
25 carried over a coaxial cable network in accordance with the MoCA standards,  
26 including at least the Arris DCX3200, DCX3400, DCX3500, XG1-A, XG1v3,  
27 XG1v4, XG2v2, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace  
28 PXD01ANI, Samsung SR150BNM, and similarly operating devices. Because

1 Comcast was already aware of Entropic's Pre-Investment MoCA patents and knew  
2 that those patents were standard-essential, Comcast knew that its use of these devices  
3 would directly infringe the Pre-Investment MoCA patents. Despite this knowledge,  
4 Comcast willfully infringed the Pre-Investment Patents beginning no later than 2010.

5 **1. Comcast's Involvement in MoCA**

6 129. Upon information and belief, Comcast was involved with and/or a  
7 member of MoCA from the earliest days of the MoCA, through at least August 2019.  
8 Indeed, Comcast was a member of the MoCA board of directors.<sup>8</sup>

9 130. As an early and active member of MoCA, Comcast helped to develop the  
10 MoCA standard, and therefore would have been knowledgeable about the technology  
11 essential to the practice of that standard.

12 131. Upon information and belief, Comcast was aware that Entropic, its close  
13 partner in the endeavor to grow and developed the MoCA standard, owned patents for  
14 its technology that was MoCA-standard-compliant.<sup>9</sup>

15 132. Specifically, Comcast would have been aware of at least the '249 Patent,  
16 which was filed on July 21, 2001; the '518 Patent, which was filed on December 18,  
17 2002; the '759 Patent, which was filed on July 24, 2004; the '450 Patent, which was  
18 filed on September 19, 2005; the '539 Patent, which was filed on September 29, 2005;  
19 and the '802 Patent, which was filed on December 2, 2005. These Patents, all of  
20 which are essential to the practice of the MoCA standard, were filed during the time  
21 that MoCA was being developed by Entropic Inc., Comcast, and others.

22 133. Upon information and belief, no later than the day prior to its latest  
23 investment in Entropic in 2006, any reasonable commercial party in Comcast's  
24 position, with Comcast's knowledge, would perceive a substantial likelihood that

25 <sup>8</sup> See <https://mocalliance.org/about/faqs.php>.

26 <sup>9</sup> See  
27 [https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr201412](https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm)  
28 [3110-k.htm](https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm).

1 deployment of MoCA standard-compliant devices would infringe on Pre-Investment  
2 Patents owned by Entropic.

3 134. On information and belief, Comcast continued to monitor and analyze  
4 Entropic's MoCA-related patents and was aware of later-filed patents that are  
5 standard-essential to MoCA simply due to the importance of MoCA to Comcast's  
6 business and Comcast's later involvement as a board member of the MoCA.

7 135. As a member of the MoCA, Comcast was well aware that Entropic, the  
8 owner of the MoCA Patents, was the leading contributor of technology to the  
9 standards promulgated by MoCA, which are implicated by the claims of patent  
10 infringement herein. Indeed, Comcast was aware that, at the time, Entropic was the  
11 only entity capable of developing the technology necessary to practice the MoCA  
12 standard.

13 136. Upon information and belief, Comcast knew that MoCA  
14 standard-compliant devices had tremendous success, given the public success through  
15 Verizon Wireless's deployment of Fios.

16 137. Comcast also willfully infringed the '518 Patent by virtue of its  
17 involvement in MoCA. On October 28, 2008, Anton Monk, the Vice President of  
18 Technology for Entropic Inc., disclosed Entropic Inc.'s ownership of the '518 Patent  
19 via email to the MoCA Board of Directors.

20 138. Attached to this email was a document entitled "Disclosure of Intellectual  
21 Property," which represents to the MoCA Board of Directors that the '518 Patent was  
22 essential to the practice of the MoCA standard.

23 139. On information and belief, Comcast was a member of the Board at the  
24 time and therefore received this notice from Entropic.

25 140. Comcast therefore had direct notice of the '518 Patent and that the '518  
26 Patent is essential to the practice of the MoCA standard.

27 141. The '759 Patent is a continuation-in-part of the '518 Patent. Given the  
28 close relationship between the '759 Patent and the '518 Patent, Comcast also was on

1 notice that the '759 Patent was owned by Entropic Inc. and is essential to the practice  
2 of the MoCA standard.

3 142. At the very least, Comcast engaged in a scheme to be willfully blind to  
4 the existence of the '759 Patent and the fact that it is essential to the practice of  
5 MoCA standard based on its relation to the '518 Patent.

## 6 **2. Comcast's Relationship with MaxLinear**

7 143. Comcast and MaxLinear, Inc. were engaged in a longstanding  
8 commercial relationship for years. Upon information and belief, Comcast knew that  
9 MaxLinear, Inc. was a member of MoCA since at least 2011.

10 144. Comcast and MaxLinear, Inc. were both board members of MoCA from  
11 at least 2015 through August 2019. By virtue of Comcast's participation in MoCA and  
12 its ongoing, extensive use of MoCA standards, on information and belief, Comcast  
13 monitored and reviewed the publication and issuance of patents that would be  
14 standard-essential, including MaxLinear and Entropic Inc. patents. Because Comcast  
15 was using the devices that practiced the MoCA standards, Comcast willfully infringed  
16 each MaxLinear and Entropic Inc. patent that was standard-essential to MoCA no  
17 later than shortly after the issuance of those patents. To the extent Comcast did not  
18 engage in such review, it constitutes willful blindness to patent infringement due to  
19 Comcast's knowledge of the foundational role and contributions of Entropic Inc. and  
20 MaxLinear to the MoCA standards.

21 145. At least as early as January 1, 2020, Comcast knew that MaxLinear  
22 owned patents that were essential to practicing the technology embodied in one or  
23 more standards promulgated by MoCA.

24 146. Comcast knew that MaxLinear acquired Entropic Inc. and its patents in  
25 2015.<sup>10</sup> Because Comcast already knew it was willfully infringing patents owned by  
26 Entropic Inc., Comcast therefore knew that it was willfully infringing patents that

27 <sup>10</sup> See [https://investors.maxlinear.com/annual-reports?form\\_type=10-K&year=](https://investors.maxlinear.com/annual-reports?form_type=10-K&year=).  
28

1 were standard-essential to MoCA that now were owned by MaxLinear no later than  
2 2015.

3 147. No later than the day prior to signing the VSA with MaxLinear, Inc.,  
4 Comcast knew or had every reason to know that MaxLinear, Inc. owned patents  
5 related to the MoCA technology such that deployment of MoCA standard-compliant  
6 devices would infringe on patents owned by MaxLinear. To the extent Comcast did  
7 not investigate whether it infringed such patents, Comcast was willfully blind to its  
8 infringement of patents owned by its long-time business partner, MaxLinear.

9 148. [REDACTED]  
10 [REDACTED]  
11 [REDACTED]  
12 [REDACTED]

13 149. [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED]  
18 [REDACTED]

19 150. [REDACTED]  
20 [REDACTED]  
21 [REDACTED] related to  
22 non-standardized technologies deployed in the cable television and/or cable internet  
23 businesses, technologies that Comcast uses and deploys.

24 151. Despite this knowledge, Comcast continued to use and deploy devices  
25 practicing the MoCA standards and therefore willfully infringed patents owned by  
26 MaxLinear, including the MoCA Patents.

27 152. Accordingly, Comcast either knew about the MoCA Patents, or  
28 alternatively engaged in a scheme to be willfully blind to the existence of the MoCA

1 Patents. Comcast therefore willfully infringed at least the Pre-Investment Patents and  
2 the later-issued MoCA patents no later than the day prior to [REDACTED]

3 [REDACTED]  
4 153. Upon information and belief, in addition to the knowledge as set forth  
5 above, one of the named inventors of the '008 Patent and '826 Patent, as set forth in  
6 Entropic's concurrently filed action *Entropic v. Comcast, et al.*, No.  
7 2:23-cv-1050-JWH-KES, was Patrick Tierney. Mr. Tierney now works at Comcast;  
8 thus, upon information and belief, Comcast knew of the aforementioned MoCA  
9 Patents as early as the day Mr. Tierney was hired.

10 154. Comcast also attached to its own motion to dismiss a copy of [REDACTED]  
11 [REDACTED]  
12 [REDACTED] *See Entropic*  
13 *v. Comcast*, No. 2:23-cv-1050-JWH-KES, at Dkt. No. 39-1, Ex. A. [REDACTED]  
14 [REDACTED]  
15 [REDACTED]

16 155. Comcast also willfully infringed two other MaxLinear patents no later  
17 than June 9, 2022. Specifically, during prosecution of Comcast's 17/201,189 patent  
18 application, the patent examiner cited to MaxLinear, Inc.'s MoCA-related U.S. Patent  
19 No. 10,075,333 (the "'333 Patent") in a non-final rejection, which Comcast received  
20 on June 9, 2022. Additionally, the '116 Patent was cited during prosecution of  
21 Comcast's patent application 16/777,622. The examiner cited MaxLinear, Inc.'s  
22 MoCA-related U.S. Patent No. 10,285,116 ("'116 Patent")'s publication in a non-final  
23 rejection, which Comcast received on October 16, 2020. On information and belief,  
24 no later than June 9, 2022, Comcast substantively reviewed and analyzed the '333  
25 Patent. On information and belief, no later than October 16, 2020, Comcast  
26 substantively reviewed and analyzed the '116 Patent. On information and belief,  
27 Comcast has willfully infringed the '333 and '116 Patents beginning no later than  
28 June 9, 2022 and October 16, 2020, respectively.

1           **3. The ViXS Suit**

2           156. Entropic filed a patent infringement suit against ViXS Systems, Inc. and  
3 ViXS USA, Inc. in the Southern District of California, Case No.  
4 13-CV-1102-WQHBGS (“the ViXS Suit”), on May 8, 2013, asserting infringement of  
5 the ’759 Patent and the ’518 Patent. Both patents are essential to the standards  
6 developed and promulgated by MoCA.

7           157. Upon information and belief, as a member of MoCA, Comcast analyzed  
8 the claims in the ViXS Suit and the patents asserted in that case, which included the  
9 ’759 and ’518 Patents.

10          158. Upon information and belief, Comcast analyzed its products’  
11 functionality in light of the patents asserted in the ViXS Suit.

12          159. Because Comcast already was using and deploying devices practicing the  
13 MoCA standards (and continued to do so), Comcast willfully infringed the ’759 and  
14 ’518 Patents no later than May 8, 2013, after substantively analyzing the complaint  
15 and the patents asserted in the ViXS suit.

16          160. As addressed above, Comcast has willfully infringed at least the ’759  
17 Patent and the ’518 Patent through its knowledge gained from the ViXS Suit, and was  
18 aware of (and substantively analyzed its infringement of) the other MoCA Patents no  
19 later than the letter sent by Entropic in August 2022.

20          161. As a member of MoCA, Comcast was well aware that Entropic Inc., the  
21 owner of the MoCA Patents in the ViXS Suit, was the leading contributor of  
22 technology to the standards promulgated by MoCA, which are implicated by the  
23 claims of patent infringement in the ViXS Suit.



**D. Comcast has willfully infringed each of the Patents-in-Suit through its post-suit conduct.<sup>11</sup>**

162. Despite having knowledge of its infringement of the Patents-in-Suit by virtue of Entropic's original Complaint, its First Amended Complaint, and its infringement contentions, Comcast continues to make, use, sell, or offer for sale the Accused Products. Thus, Comcast continues to willfully infringe the Patents-in-Suit.

163. Further, on December 1, 2023, MaxLinear, Inc. filed a Counterclaim against Comcast in the Southern District of New York ("SDNY") containing detailed allegations of Comcast's misappropriation of MaxLinear's trade secrets. These allegations shed further light on Comcast's willful infringement of the Patents-in-Suit.

164. Even if Comcast had not willfully infringed the Patents-in-Suit, MaxLinear, Inc. provided notice of termination of the VSA to Comcast on May 18, 2023, and the VSA is therefore no longer in effect.

**1. Original Complaint**

165. Before the filing of this Second Amended Complaint, on February 16, 2023, Comcast accepted service of Entropic's original Complaint alleging infringement of the same Patents-in-Suit. See DE 1. Entropic hereby incorporates its original Complaint into this Second Amended Complaint by reference.

166. Entropic's original Complaint specifically described the infringing nature of the Accused Products, which are the same as those described herein. Further, the original complaint set forth detailed allegations of how each of the Patents-in-Suit was infringed by one of or more of the Accused Products.

---

<sup>11</sup> Entropic has filed a motion for leave to supplement its complaint with the allegations contained in Section E herein contemporaneously with this Second Amended Complaint. This motion requests leave to include allegations of events that occurred after the filing of the original complaint, and it includes a redlined copy of the proposed supplemental pleading to Entropic's First Amended Complaint, consistent with this Court's Standing Order.

1 167. Comcast thereafter analyzed Entropic's allegations of infringement and  
2 has indeed engaged in substantive discussions with Entropic related to Entropic's  
3 infringement allegations.

4 168. Indeed, after Entropic's Complaint was filed, on information and belief,  
5 Comcast again sought indemnification from its suppliers for Entropic's claims.

6 169. Thus, Comcast was on notice of the basis for Entropic's infringement  
7 claims and sought protection for those claims from its suppliers. On information and  
8 belief, Comcast could not have stated grounds for indemnification by specific  
9 suppliers unless it had knowledge of the basis for Entropic's infringement claims, as  
10 well as the specific products that were being accused.

11 170. Thus, Comcast has been aware that it infringed the Patents-in-Suit since  
12 the service of Entropic's original Complaint, on February 16, 2023.

## 13 **2. First Amended Complaint**

14 171. Before the filing of this Second Amended Complaint, on June 5, 2023,  
15 Comcast was served with Entropic's First Amended Complaint alleging infringement  
16 of the same Patents-in-Suit. *See* DE 63. Entropic hereby incorporates its First  
17 Amended Complaint into this Second Amended Complaint by reference.

18 172. Even more so than its original Complaint, Entropic's First Amended  
19 Complaint set forth specific allegations of Comcast's infringement of each of the  
20 Patents-in-Suit. Entropic included reference to particular patents that Comcast  
21 willfully infringed based on its use of particular technology.

22 173. Comcast thereafter analyzed Entropic's allegations of infringement and  
23 has indeed engaged in substantive discussions with Entropic related to Entropic's  
24 infringement allegations.

25 174. Thus, Comcast has been aware that it infringed Patents-in-Suit since the  
26 service of Entropic's original Complaint, on June 5, 2023.

## 27 **3. Entropic's Infringement Contentions**

28

1 175. Further, Entropic's infringement contentions, served on September 15,  
2 2023, provided Comcast with additional notice of infringement. Entropic hereby  
3 incorporates its infringement contentions into this Second Amended Complaint by  
4 reference.

5 176. Entropic's infringement contentions set forth Entropic's infringement  
6 positions in detail, and they include charts setting forth how each Accused Product  
7 specifically infringed each Asserted Patent.

8 177. In particular, Entropic identified how Comcast's development and use of  
9 a PMA system that generates and transacts D3.1 downstream (DS) profiles infringes  
10 upon Entropic's '682 Patent.

11 178. Comcast thereafter analyzed the infringement contentions and has  
12 engaged in thorough discussions with Entropic regarding the substance of these  
13 contentions.

14 179. Thus, Comcast has been aware that it infringed Patents-in-Suit since at  
15 least September 15, 2023.

16 180. To date, Comcast has continued its wrongful and willful use of the  
17 Patents-in-Suit, and has further continued its attempts to shield itself from liability for  
18 its wrongful use thereof.

19 181. Comcast's continued sale of the Accused Products despite its knowledge  
20 of the infringement set forth in Entropic's original Complaint, Second Amended  
21 Complaint, and Entropic's infringement contentions demonstrates its intent to  
22 willfully infringe the Patents-in-Suit.

#### 23 **4. MaxLinear's SDNY Counterclaim**

24 182. On December 1, 2023, MaxLinear, Inc. filed a Counterclaim against  
25 Comcast, alleging that Comcast breached the nondisclosure agreement (the "NDA") it  
26 entered into with MaxLinear, Inc. and misappropriated MaxLinear, Inc.'s trade  
27 secrets. See Comcast Cable Communications Management, LLC, et al. v. MaxLinear,  
28 Inc., Case No. 1:23-cv-04436-AKH, DE 88 (S.D.N.Y. Dec. 1, 2023). This

1 Counterclaim is hereby incorporated into this Second Amended Complaint by  
2 reference.

3 183. In its Counterclaim, MaxLinear, Inc. alleges that Comcast intentionally,  
4 and in violation of the NDA, capitalized off of MaxLinear's breakthrough FDX  
5 technology by first convincing MaxLinear to disclose that technology to Comcast, and  
6 then by taking credit for technology and divulging the information it learned to  
7 MaxLinear's competitor.

8 184. Specifically, Comcast knowingly published aspects of MaxLinear's FDX  
9 amplifier design as its own through its employee, Richard Prodan; disclosed the  
10 amplifier design to MaxLinear's competitor; and paid the competitor to create a  
11 functionally identical amplifier for Comcast.

12 185. MaxLinear goes on to allege that, while Comcast has previously hid  
13 behind Section 7.3 of the VSA—an agreement which Comcast itself  
14 drafted—Comcast's knowing misappropriation of MaxLinear's FDX-amplifier trade  
15 secret technology has rendered this provision irrelevant.

16 5. [REDACTED]

17 186. [REDACTED]

18 [REDACTED]  
19 187. [REDACTED]

20 [REDACTED]  
21 188. [REDACTED]

22 [REDACTED]  
23 **JURISDICTION AND VENUE**

24 189. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331  
25 and 1338(a) because the claims herein arise under the patent laws of the United States,  
26 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271.

27 190. Venue in this District is proper pursuant to 28 U.S.C. § 1400(b), because  
28 Comcast has regular and established places of business in this District. The

1 defendants, by themselves and/or through their agents, have committed acts of patent  
2 infringement within the State of California and within this District by using, selling,  
3 offering for sale, and/or leasing various telecommunication services products and  
4 services.

5 191. This Court has general personal jurisdiction over Comcast Corp. because  
6 it conducts systematic and regular business within the State of California by, *inter alia*  
7 providing cable television, internet, and phone services to businesses and residents  
8 throughout the state. Comcast Corp.'s website states that, "Comcast is deeply  
9 committed to California, where our nearly 5,000 employees serve more than 3 million  
10 customers throughout the state."<sup>12</sup>

11 192. Upon information and belief, Comcast Management has a regular and  
12 established place of business in the State of California including at least at 3055  
13 Comcast Place, Livermore, California 94551.

14 193. The Court has personal jurisdiction over Comcast Corp., Comcast  
15 Communications and Comcast Management because they have committed acts of  
16 infringement within the State of California and within this District through, for  
17 example, providing through their wholly owned subsidiaries, "Comcast" and  
18 "Xfinity" branded products and services, including, Xfinity set top boxes ("STBs")  
19 and Xfinity digital video, audio, and other content services to customers. Comcast  
20 provides cable television and internet services ("Accused Services") via the lease,  
21 sale, and/or distribution of cable modems and set top boxes both online and from  
22 Comcast stores in this District. For example, Comcast has and continues to sell, lease,  
23 and/or distribute the Technicolor TC8717 cable modem, Technicolor CGM4140 cable  
24 modem, Technicolor CGM4331 cable modem, and products that operate in a similar  
25 manner ("Accused Cable Modem Products"), as well as the Arris AX013ANC STB,

26 <sup>12</sup> See

27 [https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20com](https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20committed%20to,smart%20home%E2%80%9D%20and%20phone%20service.)  
28 [mitted%20to,smart%20home%E2%80%9D%20and%20phone%20service.](https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20committed%20to,smart%20home%E2%80%9D%20and%20phone%20service.)

1 Arris AX013ANM STB, Arris AX014ANC STB, Arris AX014ANM STB, Arris  
2 MX011ANC STB, Arris MX011ANM STB, Pace PX001ANC STB, Pace  
3 PX013ANC STB, Pace PX013ANM STB, Pace PX022ANC STB, Pace PX022ANM  
4 STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that  
5 operate in a similar manner (“Accused Set Top Products”).<sup>13</sup>

6 194. Upon information and belief, Comcast Corp., Comcast Communications,  
7 and Comcast Management, by themselves and/or through their agents, offer various  
8 telecommunication services throughout the United States. Comcast operates and  
9 maintains a nationwide television and data network through which it sells, leases, and  
10 offers for sale products and services, including the Accused Services, Accused Cable  
11 Modem Products and Accused Set Top Products, to businesses, consumers, and  
12 government agencies. Through its subsidiaries, Comcast Corp. offers to sell, sells, and  
13 provides “Comcast” and “Xfinity” branded products and services, including cable  
14 modems, set top boxes, and digital video, audio, and other content services to  
15 customers. Subscribers to Comcast’s television services receive one or more receivers  
16 and/or set-top boxes within this District. Subscribers to Comcast’s internet services  
17 receive one or more cable modems within this District.

18 195. Upon information and belief, those services are provided through and  
19 using the Accused Cable Modem Products and Accused Set Top Products.

20 196. Upon information and belief, Comcast Corp., Comcast Communications,  
21 and Comcast Management, by themselves and/or through their agents, Comcast Santa  
22 Maria and/or Comcast Lompoc, operate their businesses through *inter alia* offices,  
23 warehouses, storefronts, and/or other operational locations within this District,

24 <sup>13</sup> Entropic provided its initial infringement contentions for the ’775, ’690, ’008, ’362,  
25 ’826, ’682, ’866, and ’206 Patents on September 15, 2023. Entropic [provided its](#)  
26 [initial infringement contentions for the ’438 and ’275 Patents on November 3, 2023.](#)  
27 [Entropic](#) has revised this Second Amended Complaint to reflect the initial  
28 infringement contentions, which include references to certain documents provided in  
discovery to Comcast by Entropic.

1 including, for example, at the Xfinity by Comcast stores located in this District at 685  
2 East Betteravia Rd., Santa Maria, California 93454; and 1145 N. H Street, Suite B,  
3 Lompoc, California 93436. Comcast holds out these locations as its own through the  
4 use of branding on the locations themselves.

5 197. Comcast lists these Xfinity by Comcast stores on its website and holds  
6 them out as places where customers can obtain the Accused Services, Accused Cable  
7 Modem Products and Accused Set Top Products.

8 198. Upon information and belief, one or more of the defendants owns and/or  
9 leases the premises where these Xfinity by Comcast stores are located.

10 199. Upon information and belief, these Xfinity by Comcast stores are staffed  
11 by persons directly employed by Comcast, many of whom live in this District.

12 200. Upon information and belief, one or more of the defendants has engaged  
13 in regular and established business at physical places within this District such as at  
14 these two Xfinity by Comcast stores.

15 201. Upon information and belief, Comcast employs and/or contracts with  
16 persons and directs them to install, service, repair, and/or replace equipment, as  
17 appropriate, in this District.

18 202. Upon information and belief, in each of these stores and/or service  
19 centers, Comcast owns and stores equipment such as cable modems and set top boxes  
20 and demonstrates services provided via those products to Comcast customers.

21 203. Comcast has adopted and ratified the Comcast and Xfinity-branded  
22 locations identified in this District. The Comcast website advertises Comcast service  
23 packages available from Comcast-authorized retailers in this District, and prospective  
24 employees can find Comcast job listings in this District. Furthermore, the “corporate”  
25 section of Comcast’s main website has a section containing “Special Information  
26 Regarding California Residents’ Privacy Rights,” which demonstrates that Comcast is  
27 purposefully holding itself out as providing products and services in California.  
28



1       204. Upon information and belief, Comcast Corp., and/or Comcast  
2 Communications, by themselves and/or through their agent, Comcast Management,  
3 provides the Accused Services throughout the United States and in this District.

4       205. Upon information and belief, Comcast Corp. and/or Comcast  
5 Management, by themselves, and/or through their agent, Comcast Communications,  
6 sells, and offers for sale, and provides the Accused Services, the Accused Cable  
7 Modem Products and the Accused Set Top Products throughout the United States and  
8 in this District.

9       206. The Accused Services are available for subscription from various  
10 physical stores, including those at 685 East Betteravia Rd., Santa Maria, California,  
11 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436.

12       207. The devices, including the Accused Cable Modem Products and the  
13 Accused Set Top Products provided by Comcast to supply the Accused Services, are  
14 provided to customers in this District and may be obtained by customers from  
15 physical locations in this District, including those at 685 East Betteravia Rd., Santa  
16 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436.

17       208. Venue is further proper because Comcast has committed and continues to  
18 commit acts of patent infringement in this District, including making, using, offering  
19 to sell, and/or selling Accused Services, Accused Cable Modem Products and  
20 Accused Set Top Products in this District, and/or importing the Accused Cable  
21 Modem Products and Accused Set Top Products into, and thereafter providing  
22 Accused Services in, this District, including by Internet sales and sales via retail and  
23 wholesale stores. Furthermore, for example, Comcast deploys Accused Cable Modem  
24 Products and Accused Set Top Products to many thousands of locations (e.g.,  
25 customer premises) in this District and subsequently, by means of those  
26 instrumentalities, uses the claimed inventions at those locations in this District.  
27 Comcast infringes by inducing and contributing to acts of patent infringement in this  
28

1 District and/or committing at least a portion of any other infringement alleged herein  
2 in this District.

3 209. Comcast continues to conduct business in this District, including the acts  
4 and activities described in the preceding paragraph.

5 **COUNT I**

6 **(Infringement of the '775 Patent)**

7 210. Entropic incorporates by reference each allegation of the paragraphs  
8 above as if fully set forth herein.

9 211. Entropic served infringement contentions which included a claim chart  
10 for the '775 Patent on September 15, 2023.

11 212. The '775 Patent duly issued on July 17, 2012 from an application filed  
12 September 30, 2003.

13 213. Entropic owns all substantial rights, interest, and title in and to the  
14 '775 Patent, including the sole and exclusive right to prosecute this action and enforce  
15 the '775 Patent against infringers and to collect damages for all relevant times.

16 214. The '775 Patent generally describes a partitioned cable modem that  
17 performs cable modem functions and data and home networking functions.  
18 Functionally partitioning a cable modem to perform cable modem functions and data  
19 and home networking functions enables a cable modem to incorporate a variety of  
20 enhanced functions. A true and accurate copy of the '775 Patent is attached hereto as  
21 Exhibit 1.

22 215. The '775 Patent is directed to patent-eligible subject matter pursuant to  
23 35 U.S.C. § 101.

24 216. The '775 Patent is valid and enforceable, and presumed as such, pursuant  
25 to 35 U.S.C. § 282.

26 217. Comcast deploys one or more of the Accused Cable Modem Products in  
27 connection with operating and providing the Accused Services.  
28

1           218. The Accused Cable Modem Products deployed by Comcast to customer  
2 premises remain the property of Comcast while deployed.

3           219. The Accused Cable Modem Products operate while deployed in a manner  
4 controlled and intended by Comcast.

5           220. As set forth in the infringement contentions served on Comcast on  
6 September 15, 2023 (attached hereto as Exhibit 2),<sup>14</sup> Comcast has directly infringed  
7 and is infringing at least Claims 18 and 19 of the '775 Patent by using, importing,  
8 selling, and/or offering for sale the Accused Cable Modem Products and/or the  
9 Accused Services.

10           221. Each aspect of the functioning of the Accused Cable Modem Products  
11 described in the claim chart operates while deployed to customer premises in a  
12 manner controlled and intended by Comcast.

13           222. Comcast provides no software, support, or other facility to customers to  
14 modify any aspect of the functioning described in the claim chart of the Accused  
15 Cable Modem Products while deployed to customer premises.

16           223. Comcast directly infringes at least Claims 18 and 19 of the '775 Patent  
17 by using, importing, selling, and/or offering for sale the Accused Cable Modem  
18 Products (for example, the Technicolor CGM4140 cable modem) and/or the Accused  
19 Services (for example, utilizing cable modem functions).

20           224. The use of the Accused Cable Modem Products by Comcast to, for  
21 example, demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd.,  
22 Santa Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California  
23 93436, or to, for example, test those products, constitute acts of direct infringement of  
24 at least Claims 18 and 19 of the '775 Patent.

25           225. [REDACTED]  
26 [REDACTED]

27  
28 <sup>14</sup> The original claim chart for this patent is located at DE 63.

1 [REDACTED]  
2 [REDACTED]  
3 226. Comcast has known of or has been willfully blind to the '775 Patent  
4 since before, and no later than the date of, its acceptance of service of the original  
5 Complaint in this action on February 16, 2023.

6 227. Comcast has known of or has been willfully blind to the '775 Patent  
7 since before, and no later than the date of, its acceptance of service of the First  
8 Amended Complaint in this action on June 5, 2023.

9 228. Comcast has known of or has been willfully blind to the '775 Patent  
10 since before, and no later than the date of, its acceptance of service of Entropic's  
11 infringement contentions on September 15, 2023.

12 229. Comcast has known of or has been willfully blind to the '775 Patent  
13 since no later than the day before signing the [REDACTED]

14 230. Comcast has known of or has been willfully blind to the '775 Patent  
15 since no later than the day before investing in Entropic Inc. in or about 2006.

16 231. Comcast has known of the '775 Patent no later than its receipt of  
17 Entropic's communication sent to Comcast on August 9, 2022.

18 232. Comcast has been aware that it infringes the '775 Patent since well  
19 before, and no later than the date of, its receipt of Entropic's August 9, 2022  
20 communication, attached as Exhibit 17. Since obtaining knowledge of the '775 Patent  
21 and its infringing activities, Comcast has failed to cease its infringing activities.

22 233. Customers and subscribers of Comcast infringe at least Claims 18 and 19  
23 of the '775 Patent by using the claimed system, at least during the use of the Accused  
24 Cable Modem Products.

25 234. Comcast actively induces customers' direct infringement. For example,  
26 Comcast actively induces infringement of at least Claims 18 and 19 of the '775 Patent  
27 by providing the Accused Cable Modem Products to Comcast customers with specific  
28 instructions and/or assistance (including installation) regarding the use of the Accused

1 Cable Modem Products to infringe the '775 Patent in accordance with the ordinary  
2 course of operation through the provision of the Accused Services. For at least the  
3 above-listed reasons, Comcast aids, instructs, supports, and otherwise acts with the  
4 intent to cause an end user to use the Accused Cable Modem Products to infringe at  
5 least Claims 18 and 19 of the '775 Patent.

6 235. Comcast contributes to the customers' direct infringement. Comcast  
7 provides apparatuses, namely the Accused Cable Modem Products, that are used by  
8 customers to directly infringe at least Claims 18 and 19 of the '775 Patent.

9 236. The Accused Cable Modem Products have no substantial noninfringing  
10 uses. When an end user uses the Accused Cable Modem Products to receive the  
11 Accused Services, the end user directly infringes at least Claims 18 and 19 of the '775  
12 Patent. The Accused Cable Modem Products are especially made or especially  
13 adapted for use in an infringing manner.

14 237. Comcast's inducement of, and contribution to, the direct infringement of  
15 at least Claims 18 and 19 of the '775 Patent is continuous and ongoing through acts  
16 such as providing the Accused Cable Modem Products to Comcast customers, which  
17 enables those customers to receive the Accused Services; Comcast's provision of the  
18 Accused Services; and technical assistance provided by Comcast for equipment it  
19 provides to its customers in support of the provision of the Accused Services.

20 238. Comcast's infringement of the '775 Patent is, has been, and continues to  
21 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights  
22 under the patent.

23 239. Entropic has been damaged as a result of the infringing conduct alleged  
24 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
25 Comcast's infringement, which by law cannot be less than a reasonable royalty,  
26 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

27 240. Entropic is aware of no obligation to mark any instrumentality with the  
28 '775 Patent in accordance with 35 U.S.C. § 287.

**COUNT II**

**(Infringement of the '690 Patent)**

241. Entropic incorporates by reference each allegation above as if fully set forth herein.

242. Entropic served infringement contentions which included a claim chart for the '690 Patent on September 15, 2023.

243. The '690 Patent duly issued on October 9, 2012 from an application filed December 10, 2009, and, *inter alia* a provisional application filed May 19, 2009 and a provisional application filed December 15, 2008.

244. Entropic owns all substantial rights, interest, and title in and to the '690 Patent, including the sole and exclusive right to prosecute this action and enforce the '690 Patent against infringers and to collect damages for all relevant times.

245. The '690 Patent generally describes the process of generating probe transmissions in response to a request from a receiving node of a network, wherein the probe request specifies a plurality of parameters that specify content payload of the probe transmission, and a second node to receive the probe transmission, which enhances flexibility and therefore, improves the receiving node's ability to efficiently recognize the precise form of the transmitted probe. A true and accurate copy of the '690 Patent is attached hereto as Exhibit 3.

246. The '690 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

247. The '690 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

248. Comcast deploys one or more of the Accused Cable Modem Products in connection with operating and providing the Accused Services.

249. The Accused Cable Modem Products deployed by Comcast to customer premises remain the property of Comcast while deployed.

1           250. The Accused Cable Modem Products operate while deployed in a manner  
2 controlled and intended by Comcast.

3           251. As set forth in the infringement contentions served on Comcast on  
4 September 15, 2023 (attached hereto as Exhibit 4),<sup>15</sup> Comcast has directly infringed  
5 and is infringing at least Claims 7 and 8 of the '690 Patent by using, importing,  
6 selling, and/or offering for sale the Accused Cable Modem Products and/or the  
7 Accused Services.

8           252. Each aspect of the functioning of the Accused Cable Modem Products  
9 described in the claim chart operates while deployed to customer premises in a  
10 manner controlled and intended by Comcast.

11           253. Comcast provides no software, support, or other facility to customers to  
12 modify any aspect of the functioning described in the claim chart of the Accused  
13 Cable Modem Products while deployed to customer premises.

14           254. Comcast directly infringes at least Claims 7 and 8 of the '690 Patent by  
15 using, importing, selling, and/or offering for sale the Accused Cable Modem Products  
16 (for example, the Technicolor CGM4140 cable modem) and/or the Accused Services  
17 (for example, performing bidirectional communication with cable modems).

18           255. The use of the Accused Services by Comcast to, for example,  
19 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa  
20 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,  
21 or to, for example, test those products, constitute acts of direct infringement of at least  
22 Claims 7 and 8 of the '690 Patent.

23           256. [REDACTED]  
24 [REDACTED]  
25 [REDACTED]  
26 [REDACTED]

27  
28 <sup>15</sup> The original claim chart for this patent is located at DE 63.



1           257. Comcast has known of or has been willfully blind to the '690 Patent  
2 since before, and no later than the date of, its acceptance of service of the original  
3 Complaint in this action on February 16, 2023.

4           258. Comcast has known of or has been willfully blind to the '690 Patent  
5 since before, and no later than the date of, its acceptance of service of the First  
6 Amended Complaint in this action on June 5, 2023.

7           259. Comcast has known of or has been willfully blind to the '690 Patent  
8 since before, and no later than the date of, its acceptance of service of Entropic's  
9 infringement contentions on September 15, 2023.

10          260. Comcast has known of or has been willfully blind to the '690 Patent no  
11 later than the day before signing the [REDACTED]

12          261. Comcast has known of or has been willfully blind to the '690 Patent  
13 since no later than the date of its receipt of Entropic's communication sent to Comcast  
14 on August 9, 2022.

15          262. Comcast has been aware that it infringes the '690 Patent since well  
16 before, and no later than the date of, Entropic's August 9, 2022 communication,  
17 attached as Exhibit 17. Since obtaining knowledge of the '690 Patent and its  
18 infringing activities, Comcast has failed to cease its infringing activities.

19          263. Customers and subscribers of Comcast infringe at least Claims 7 and 8 of  
20 the '690 Patent by using the claimed method, at least during receipt of the Accused  
21 Services utilizing, for example, the Accused Cable Modem Products.

22          264. Comcast actively induces customers' direct infringement. For example,  
23 Comcast actively induces infringement of at least Claims 7 and 8 of the '690 Patent  
24 by providing the Accused Cable Modem Products to Comcast customers with specific  
25 instructions and/or assistance (including installation) regarding the use of the Accused  
26 Cable Modem Products to infringe the '690 Patent in accordance with the ordinary  
27 course of operation through the provision of the Accused Services. Comcast provides  
28 the cable modem functions claimed by the '690 Patent via the Accused Services,

1 which enable and induce its customers to directly infringe the '690 Patent. For at least  
2 the above-listed reasons, Comcast aids, instructs, supports, and otherwise acts with the  
3 intent to cause an end user to use the Accused Cable Modem Products to infringe at  
4 least Claims 7 and 8 of the '690 Patent.

5 265. Comcast contributes to the customers' direct infringement. Comcast  
6 provides apparatuses, namely the Accused Cable Modem Products, that are used by  
7 customers to directly infringe at least Claims 7 and 8 of the '690 Patent.

8 266. The Accused Cable Modem Products have no substantial noninfringing  
9 uses. When an end user uses the Accused Cable Modem Products to receive the  
10 Accused Services, the end user directly infringes at least Claims 7 and 8 of the '690  
11 Patent. The Accused Cable Modem Products are especially made or especially  
12 adapted for use in an infringing manner.

13 267. Comcast's inducement of, and contribution to, the direct infringement of  
14 at least Claims 7 and 8 of the '690 Patent is continuous and ongoing through acts such  
15 as providing the Accused Cable Modem Products to Comcast customers, which  
16 enables those customers to receive the Accused Services; Comcast's provision of the  
17 Accused Services; and technical assistance provided by Comcast for equipment it  
18 provides to its customers in support of the provision of the Accused Services.

19 268. Comcast's infringement of the '690 Patent is, has been, and continues to  
20 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights  
21 under the patent.

22 269. Entropic has been damaged as a result of the infringing conduct alleged  
23 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
24 Comcast's infringement, which by law cannot be less than a reasonable royalty,  
25 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

26 270. No apparatus claims of the '690 Patent are presently asserted.  
27 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.  
28

**COUNT III**

**(Infringement of the '008 Patent)**

271. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

272. Entropic served infringement contentions which included a claim chart for the '008 Patent on September 15, 2023.

273. The '008 Patent duly issued on July 29, 2014 from an application filed September 10, 2012, and, *inter alia* a provisional application filed September 8, 2011.

274. Entropic owns all substantial rights, interest, and title in and to the '008 Patent, including the sole and exclusive right to prosecute this action and enforce the '008 Patent against infringers and to collect damages for all relevant times.

275. The '008 Patent generally describes a system that receives a signal having a plurality of channels, digitizes the received signal, and reports certain signal characteristics to the source of the received signal. A true and accurate copy of the '008 Patent is attached hereto as Exhibit 5.

276. The '008 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

277. The '008 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

278. Comcast deploys one or more of the Accused Cable Modem Products and Accused Set Top Products in connection with operating and providing the Accused Services.

279. The Accused Cable Modem Products and Accused Set Top Products deployed by Comcast to customer premises remain the property of Comcast while deployed.

280. The Accused Cable Modem Products and Accused Set Top Products operate while deployed in a manner controlled and intended by Comcast.

1       281. As set forth in the infringement contentions served on Comcast on  
2 September 15, 2023 (attached hereto as Exhibit 6),<sup>16</sup> Comcast has directly infringed  
3 and is infringing at least Claims 1-6, 9, and 10 of the '008 Patent by using, importing,  
4 selling, and/or offering for sale the Accused Cable Modem Products and Accused Set  
5 Top Products and/or the Accused Services.

6       282. Each aspect of the functioning of the Accused Cable Modem Products  
7 and Accused Set Top Products described in the claim chart operates while deployed to  
8 customer premises in a manner controlled and intended by Comcast.

9       283. Comcast provides no software, support, or other facility to customers to  
10 modify any aspect of the functioning described in the claim chart of the Accused  
11 Cable Modem Products and Accused Set Top Products while deployed to customer  
12 premises.

13       284. Comcast directly infringes at least Claims 1-6, 9, and 10 of the '008  
14 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem  
15 Products (for example, the Technicolor CGM4140 cable modem), Accused Set Top  
16 Products (for example, the Arris AX013ANM STB) and/or the Accused Services (for  
17 example, monitoring signals by the Accused Set Top Products).

18       285. The use of the Accused Cable Modem Products and Accused Set Top  
19 Products by Comcast to, for example, demonstrate products in brick-and-mortar stores  
20 at 685 East Betteravia Rd., Santa Maria, California, 93454; and 1145 N. H Street,  
21 Suite B, Lompoc, California 93436, or to, for example, test those products, constitute  
22 acts of direct infringement of at least Claims 1-6, 9, and 10 of the '008 Patent.

23       286. Comcast has known of or has been willfully blind to the '008 Patent  
24 since before, and no later than the date of, its acceptance of service of the original  
25 Complaint in this action on February 16, 2023.

26  
27  
28 <sup>16</sup> The original claim chart for this patent is located at DE 63.

1 287. Comcast has known of or has been willfully blind to the '008 Patent  
2 since before, and no later than the date of, its acceptance of service of the First  
3 Amended Complaint in this action on June 5, 2023.

4 288. Comcast has known of or has been willfully blind to the '008 Patent  
5 since before, and no later than the date of, its acceptance of service of Entropic's  
6 infringement contentions on September 15, 2023.

7 289. Comcast has known of or has been willfully blind to the '008 Patent no  
8 later than the day before [REDACTED]

9 290. Comcast has known of or has been willfully blind to the '008 Patent  
10 since before the August 9, 2022 communication from Entropic.

11 291. Comcast has been aware that it infringes the '008 Patent since well  
12 before, and no later than the date of, Entropic's August 9, 2022 communication,  
13 attached as Exhibit 17. Since obtaining knowledge of the '008 Patent and its  
14 infringing activities, Comcast has failed to cease its infringing activities.

15 292. Customers and subscribers of Comcast infringe at least Claims 1-6, 9,  
16 and 10 of the '008 Patent by using the claimed system, at least during the use of the  
17 Accused Cable Modem Products and Accused Set Top Products.

18 293. Comcast actively induces customers' direct infringement. For example,  
19 Comcast actively induces infringement of at least Claims 1-6, 9, and 10 of the '008  
20 Patent by providing the Accused Cable Modem Products and Accused Set Top  
21 Products to Comcast customers with specific instructions and/or assistance (including  
22 installation) regarding the use of the Accused Cable Modem Products and Accused  
23 Set Top Products to infringe the '008 Patent in accordance with the ordinary course of  
24 operation through the provision of the Accused Services. Comcast provides the full  
25 band digital tuning and signal monitoring functions claimed by the '008 Patent via the  
26 Accused Services, which enable and induce its customers to directly infringe the '008  
27 Patent. For at least the above-listed reasons, Comcast aids, instructs, supports, and  
28 otherwise acts with the intent to cause an end user to use the Accused Cable Modem

1 Products and Accused Set Top Products to infringe at least Claims 1-6, 9, and 10 of  
2 the '008 Patent.

3 294. Comcast contributes to the customers' direct infringement. Comcast  
4 provides apparatuses, namely the Accused Cable Modem Products and Accused Set  
5 Top Products, that are used by customers to directly infringe at least Claims 1-6, 9,  
6 and 10 of the '008 Patent.

7 295. The Accused Cable Modem Products and Accused Set Top Products  
8 have no substantial noninfringing uses. When an end user uses the Accused Cable  
9 Modem Products and Accused Set Top Products to receive the Accused Services, the  
10 end user directly infringes at least Claims 1-6, 9, and 10 of the '008 Patent. The  
11 Accused Cable Modem Products and Accused Set Top Products are especially made  
12 or especially adapted for use in an infringing manner.

13 296. Comcast's inducement of, and contribution to, the direct infringement of  
14 at least Claims 1-6, 9, and 10 of the '008 Patent is continuous and ongoing through  
15 acts such as providing the Accused Cable Modem Products and Accused Set Top  
16 Products to Comcast customers, which enables those customers to receive the  
17 Accused Services; Comcast's provision of the Accused Services; and technical  
18 assistance provided by Comcast for equipment it provides to its customers in support  
19 of the provision of the Accused Services.

20 297. Comcast's infringement of the '008 Patent is, has been, and continues to  
21 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights  
22 under the patent.

23 298. Entropic has been damaged as a result of the infringing conduct alleged  
24 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
25 Comcast's infringement, which by law cannot be less than a reasonable royalty,  
26 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

27 299. Entropic is aware of no obligation to mark any instrumentality with the  
28 '008 Patent in accordance with 35 U.S.C. § 287.

**COUNT IV**

**(Infringement of the '362 Patent)**

300. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

301. Entropic served infringement contentions which included a claim chart for the '362 Patent on September 15, 2023.

302. The '362 Patent duly issued on December 8, 2015 from an application filed February 5, 2015, an application filed August 8, 2013, an application filed April 19, 2010, and, *inter alia* a provisional application filed April 17, 2009.

303. Entropic owns all substantial rights, interest, and title in and to the '362 Patent, including the sole and exclusive right to prosecute this action and enforce the '362 Patent against infringers and to collect damages for all relevant times.

304. The '362 Patent generally describes a wideband receiver system that down converts a plurality of frequencies including desired television channels and undesired television channels, digitizes frequencies, selects desired television channels from the frequencies, and outputs the selected television channels to a demodulator as a digital data stream. A true and accurate copy of the '362 Patent is attached hereto as Exhibit 7.

305. The '362 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

306. The '362 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

307. Comcast deploys one or more of the Accused Set Top Products in connection with operating and providing the Accused Services.

308. The Accused Set Top Products deployed by Comcast to customer premises remain the property of Comcast while deployed.

309. The Accused Set Top Products operate while deployed in a manner controlled and intended by Comcast.



1           310. As set forth in the infringement contentions served on Comcast on  
2 September 15, 2023 (attached hereto as Exhibit 8),<sup>17</sup> Comcast has directly infringed  
3 and is infringing at least Claims 11 and 12 of the '362 Patent by using, importing,  
4 selling, and/or offering for sale the Accused Set Top Products and/or the Accused  
5 Services.

6           311. Each aspect of the functioning of the Accused Set Top Products  
7 described in the claim chart operates while deployed to customer premises in a  
8 manner controlled and intended by Comcast.

9           312. Comcast provides no software, support, or other facility to customers to  
10 modify any aspect of the functioning described in the claim chart of the Accused Set  
11 Top Products while deployed to customer premises.

12           313. Comcast directly infringes at least Claims 11 and 12 of the '362 Patent  
13 by using, importing, selling, and/or offering for sale the Accused Set Top Products  
14 (for example, the Arris AX013ANM STB) and/or the Accused Services (for example,  
15 digitizing and selecting desired television channels provided by Comcast).

16           314. The use of the Accused Set Top Products by Comcast to, for example,  
17 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa  
18 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,  
19 or to, for example, test those products, constitute acts of direct infringement of at least  
20 Claims 11 and 12 of the '362 Patent.

21           315. Comcast has known of or has been willfully blind to the '362 Patent  
22 since before, and no later than the date of, its acceptance of service of the original  
23 Complaint in this action on February 16, 2023.

24           316. Comcast has known of or has been willfully blind to the '362 Patent  
25 since before, and no later than the date of, its acceptance of service of the First  
26 Amended Complaint in this action on June 5, 2023.

27  
28 <sup>17</sup> The original claim chart for this patent is located at DE 63.

1 317. Comcast has known of or has been willfully blind to the '362 Patent  
2 since before, and no later than the date of, its acceptance of service of Entropic's  
3 infringement contentions on September 15, 2023.

4 318. Comcast has known of or has been willfully blind to the '362 Patent no  
5 later than the day before [REDACTED]

6 319. Comcast has known of or has been willfully blind to the '362 Patent  
7 since before the August 9, 2022 communication from Entropic.

8 320. Comcast has been aware that it infringes the '362 Patent since well  
9 before, and no later than the date of, its receipt of Entropic's August 9, 2022  
10 communication, attached as Exhibit 17. Since obtaining knowledge of the '362 Patent  
11 and its infringing activities, Comcast has failed to cease its infringing activities.

12 321. Customers and subscribers of Comcast infringe at least Claims 11 and 12  
13 of the '362 Patent by using the claimed system, at least during the use of the Accused  
14 Set Top Products.

15 322. Comcast actively induces customers' direct infringement. For example,  
16 Comcast actively induces infringement of at least Claims 11 and 12 of the '362 Patent  
17 by providing the Accused Set Top Products to Comcast customers with specific  
18 instructions and/or assistance (including installation) regarding the use of the Accused  
19 Set Top Products to infringe the '362 Patent in accordance with the ordinary course of  
20 operation through the provision of the Accused Services. Comcast provides the  
21 television channel digitization, selection, and output functions claimed by the '362  
22 Patent via the Accused Services, which enable and induce its customers to directly  
23 infringe the '362 Patent. For at least the above-listed reasons, Comcast aids, instructs,  
24 supports, and otherwise acts with the intent to cause an end user to use the Accused  
25 Set Top Products to infringe at least Claims 11 and 12 of the '362 Patent.

26 323. Comcast contributes to the customers' direct infringement. Comcast  
27 provides apparatuses, namely the Accused Set Top Products, that are used by  
28 customers to directly infringe at least Claims 11 and 12 of the '362 Patent.



1           331. The '826 Patent duly issued on November 21, 2017 from an application  
2 filed November 23, 2015, an application filed July 28, 2014, an application filed  
3 September 10, 2012, and, *inter alia* a provisional application filed September 8, 2011.

4           332. Entropic owns all substantial rights, interest, and title in and to the '826  
5 Patent, including the sole and exclusive right to prosecute this action and enforce the  
6 '826 Patent against infringers and to collect damages for all relevant times.

7           333. The '826 Patent generally describes a system that receives a signal  
8 having a plurality of channels, digitizes the received signal, and reports certain signal  
9 characteristics to the source of the received signal. A true and accurate copy of the  
10 '826 Patent is attached hereto as Exhibit 9.

11           334. The '826 Patent is directed to patent-eligible subject matter pursuant to  
12 35 U.S.C. § 101.

13           335. The '826 Patent is valid and enforceable, and presumed as such, pursuant  
14 to 35 U.S.C. § 282.

15           336. Comcast deploys one or more of the Accused Cable Modem Products  
16 and Accused Set Top Products in connection with operating and providing the  
17 Accused Services.

18           337. The Accused Cable Modem Products and Accused Set Top Products  
19 deployed by Comcast to customer premises remain the property of Comcast while  
20 deployed.

21           338. The Accused Cable Modem Products and Accused Set Top Products  
22 operate while deployed in a manner controlled and intended by Comcast.

23           339. As set forth in the infringement contentions served on Comcast on  
24 September 15, 2023 (attached hereto as Exhibit 10),<sup>18</sup> Comcast has directly infringed  
25 and is infringing at least Claims 1-4, 6, 8, and 9 of the '826 Patent by using,  
26

27  
28 <sup>18</sup> The original claim chart for this patent is located at DE 63.

1 importing, selling, and/or offering for sale the Accused Cable Modem Products,  
2 Accused Set Top Products and/or the Accused Services.

3 340. Each aspect of the functioning of the Accused Cable Modem Products  
4 and Accused Set Top Products described in the claim chart operates while deployed to  
5 customer premises in a manner controlled and intended by Comcast.

6 341. Comcast provides no software, support, or other facility to customers to  
7 modify any aspect of the functioning described in the claim chart of the Accused  
8 Cable Modem Products and Accused Set Top Products while deployed to customer  
9 premises.

10 342. Comcast directly infringes at least Claims 1-4, 6, 8, and 9 of the '826  
11 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem  
12 Products and Accused Set Top Products (for example, the Technicolor CGM4140  
13 cable modem) and/or the Accused Services (for example, monitoring signals by the  
14 Accused Cable Modem Products and Accused Set Top Products).

15 343. The use of the Accused Cable Modem Products and Accused Set Top  
16 Products by Comcast to, for example, demonstrate products in brick-and-mortar stores  
17 at 685 East Betteravia Rd., Santa Maria, California, 93454; and 1145 N. H Street,  
18 Suite B, Lompoc, California 93436, or to, for example, test those products, constitute  
19 acts of direct infringement of at least Claims 1-4, 6, 8, and 9 of the '826 Patent.

20 344. Comcast has known of or has been willfully blind to the '826 Patent  
21 since before, and no later than the date of, its acceptance of service of the original  
22 Complaint in this action on February 16, 2023.

23 345. Comcast has known of or has been willfully blind to the '826 Patent  
24 since before, and no later than the date of, its acceptance of service of the First  
25 Amended Complaint in this action on June 5, 2023.

26 346. Comcast has known of or has been willfully blind to the '826 Patent  
27 since before, and no later than the date of, its acceptance of service of Entropic's  
28 infringement contentions on September 15, 2023.

1 347. Comcast has known of or has been willfully blind to the '826 Patent no  
2 later than the day before [REDACTED]

3 348. Comcast has known of or has been willfully blind to the '826 Patent  
4 since before the August 9, 2022 communication from Entropic.

5 349. Comcast has been aware that it infringes the '826 Patent since well  
6 before, and no later than the date of, its receipt of Entropic's August 9, 2022  
7 communication, attached as Exhibit 17. Since obtaining knowledge of the '826 Patent  
8 and its infringing activities, Comcast has failed to cease its infringing activities.

9 350. Customers and subscribers of Comcast infringe at least Claims 1-4, 6, 8,  
10 and 9 of the '826 Patent by using the claimed system, at least during the use of the  
11 Accused Cable Modem Products and Accused Set Top Products.

12 351. Comcast actively induces customers' direct infringement. For example,  
13 Comcast actively induces infringement of at least Claims 1-4, 6, 8, and 9 of the '826  
14 Patent by providing the Accused Cable Modem Products and Accused Set Top  
15 Products to Comcast customers with specific instructions and/or assistance (including  
16 installation) regarding the use of the Accused Cable Modem Products and Accused  
17 Set Top Products to infringe the '826 Patent in accordance with the ordinary course of  
18 operation through the provision of the Accused Services. Comcast provides the signal  
19 monitoring claimed by the '826 Patent via the Accused Services, which enable and  
20 induce its customers to directly infringe the '826 Patent. For at least the above-listed  
21 reasons, Comcast aids, instructs, supports, and otherwise acts with the intent to cause  
22 an end user to use the Accused Cable Modem Products and Accused Set Top Products  
23 to infringe at least Claims 1-4, 6, 8, and 9 of the '826 Patent.

24 352. Comcast contributes to the customers' direct infringement. Comcast  
25 provides apparatuses, namely the Accused Cable Modem Products and Accused Set  
26 Top Products, that are used by customers to directly infringe at least Claims 1-4, 6, 8,  
27 and 9 of the '826 Patent.





1           360. The '682 Patent duly issued on November 20, 2018 from an application  
2 filed January 9, 2018, an application filed February 16, 2017, an application filed  
3 August 4, 2016, an application filed July 23, 2013, and, *inter alia* a provisional  
4 application filed July 23, 2012.

5           361. Entropic owns all substantial rights, interest, and title in and to the '682  
6 Patent, including the sole and exclusive right to prosecute this action and enforce the  
7 '682 Patent against infringers and to collect damages for all relevant times.

8           362. The '682 Patent generally describes a method performed by a cable  
9 modem termination system and/or converged cable access platform, the method  
10 including determining a corresponding signal-to-noise-ratio ("SNR") related metric,  
11 assigning cable modems to service groups based on a respective corresponding  
12 SNR-related metric, generating a composite SNR-related metric based on a worst-case  
13 SNR profile, selecting a physical layer communication parameter to be used for  
14 communicating with a service group based on a composite SNR-related metric, and  
15 communicating with cable modems in the service group using the selected physical  
16 layer communication parameter. A true and accurate copy of the '682 Patent is  
17 attached hereto as Exhibit 11.

18           363. The '682 Patent is directed to patent-eligible subject matter pursuant to  
19 35 U.S.C. § 101.

20           364. The '682 Patent is valid and enforceable, and presumed as such, pursuant  
21 to 35 U.S.C. § 282.

22           365. Comcast deploys one or more of the Accused Cable Modem Products in  
23 connection with operating and providing the Accused Services.

24           366. The Accused Cable Modem Products deployed by Comcast to customer  
25 premises remain the property of Comcast while deployed.

26           367. The Accused Cable Modem Products operate while deployed in a manner  
27 controlled and intended by Comcast.

28

1           368. As set forth in the infringement contentions served on Comcast on  
2 September 15, 2023 (attached hereto as Exhibit 12),<sup>19</sup> Comcast has directly infringed  
3 and is infringing at least Claims 1-5 and 9 of the '682 Patent by using, importing,  
4 selling, and/or offering for sale the Accused Services.

5           369. Each aspect of the functioning of the Accused Cable Modem Products  
6 described in the claim chart operates while deployed to customer premises in a  
7 manner controlled and intended by Comcast.

8           370. Comcast provides no software, support, or other facility to customers to  
9 modify any aspect of the functioning described in the claim chart of the Accused  
10 Cable Modem Products while deployed to customer premises.

11           371. Comcast directly infringes at least Claims 1-5 and 9 of the '682 Patent by  
12 using, importing, selling, and/or offering for sale the Accused Services, which utilize  
13 cable modem termination systems and/or converged cable access platforms that  
14 communicate with the Accused Cable Modem Products (for example, the Technicolor  
15 CGM4140 cable modem).

16           372. The use of the Accused Services by Comcast to, for example,  
17 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa  
18 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,  
19 or to, for example, test those products, constitute acts of direct infringement of at least  
20 Claims 1-5 and 9 of the '682 Patent.

21           373. Comcast has known of or has been willfully blind to the '682 Patent  
22 since before, and no later than the date of, its acceptance of service of the original  
23 Complaint in this action on February 16, 2023.

24           374. Comcast has known of or has been willfully blind to the '682 Patent  
25 since before, and no later than the date of, its acceptance of service of the First  
26 Amended Complaint in this action on June 5, 2023.

27  
28 <sup>19</sup> The original claim chart for this patent is located at DE 63.

1 375. Comcast has known of or has been willfully blind to the '682 Patent  
2 since before, and no later than the date of, its acceptance of service of Entropic's  
3 infringement contentions on September 15, 2023.

4 376. Comcast has known of or has been willfully blind to the '682 Patent no  
5 later than the day before [REDACTED]

6 377. Comcast has known of or has been willfully blind to the '682 Patent  
7 since before the August 9, 2022 communication from Entropic.

8 378. Comcast has been aware that it infringes the '682 Patent since well  
9 before, and no later than the date of, its receipt of Entropic's August 9, 2022  
10 communication, attached as Exhibit 17. Since obtaining knowledge of the '682 Patent  
11 and its infringing activities, Comcast has failed to cease its infringing activities.

12 379. Comcast has willfully infringed the '682 Patent as evidenced by its own  
13 patents that cite to U.S. Patent No. 9,419,858 (the '858 Patent"), which is the ultimate  
14 parent of the '682 Patent. Specifically, Comcast's patents including U.S. Patent No.  
15 11,191,087; U.S. Patent No. 10,582,515; U.S. Patent No. 11,758,574 cite the '858  
16 Patent.

17 380. Comcast's reference to the '858 Patent, which is closely related to and  
18 involves similar technology and functionality as the '682 Patent, evidences Comcast's  
19 awareness that it infringes upon '682 Patent.

20 381. Further, Comcast filed an application for U.S. Patent No. 9,178,765 on  
21 July 23, 2013, in the same month that the application for the '682 Patent was filed.  
22 On information and belief, Comcast was aware of the '682 Patent based on the  
23 investigation it undertook during the application and prosecution process for U.S.  
24 Patent No. 9,178,765. Thus, Comcast has willfully infringed the '682 Patent since at  
25 least July 23, 2013.

26 382. Comcast's infringement of the '682 Patent is, has been, and continues to  
27 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights  
28 under the patent.

1 383. Entropic has been damaged as a result of the infringing conduct alleged  
2 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
3 Comcast's infringement, which by law cannot be less than a reasonable royalty,  
4 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

5 384. No apparatus claims of the '682 Patent are presently asserted.  
6 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

7 **COUNT VII**

8 **(Infringement of the '866 Patent)**

9 385. Entropic incorporates by reference each allegation of the paragraphs  
10 above as if fully set forth herein.

11 386. Entropic served infringement contentions which included a claim chart  
12 for the '866 Patent on September 15, 2023.

13 387. The '866 Patent duly issued on July 5, 2022 from an application filed  
14 January 28, 2022, an application filed March 30, 2021, an application filed June 4,  
15 2019, an application filed October 24, 2017, an application filed November 23, 2015,  
16 an application filed February 10, 2015, an application filed August 8, 2013, an  
17 application filed April 19, 2010, and, *inter alia* a provisional application filed April  
18 17, 2009.

19 388. Entropic owns all substantial rights, interest, and title in and to the '866  
20 Patent, including the sole and exclusive right to prosecute this action and enforce the  
21 '866 Patent against infringers and to collect damages for all relevant times.

22 389. The '866 Patent generally describes a cable television device that  
23 digitizes an entire input signal, concurrently selects a plurality of desired channels  
24 from the digitized input signal without selecting any undesired channels, and provides  
25 the plurality of desired channels. A true and accurate copy of the '866 Patent is  
26 attached hereto as Exhibit 13.

27 390. The '866 Patent is directed to patent-eligible subject matter pursuant to  
28 35 U.S.C. § 101.

1           391. The '866 Patent is valid and enforceable, and presumed as such, pursuant  
2 to 35 U.S.C. § 282.

3           392. Comcast deploys one or more of the Accused Set Top Products in  
4 connection with operating and providing the Accused Services.

5           393. The Accused Set Top Products deployed by Comcast to customer  
6 premises remain the property of Comcast while deployed.

7           394. The Accused Set Top Products operate while deployed in a manner  
8 controlled and intended by Comcast.

9           395. As set forth in the infringement contentions served on Comcast on  
10 September 15, 2023 (attached hereto as Exhibit 14),<sup>20</sup> Comcast has directly infringed  
11 and is infringing at least Claims 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51 of the '866  
12 Patent by using, importing, selling, and/or offering for sale the Accused Set Top  
13 Products and/or the Accused Services.

14           396. Each aspect of the functioning of the Accused Set Top Products  
15 described in the claim chart operates while deployed to customer premises in a  
16 manner controlled and intended by Comcast.

17           397. Comcast provides no software, support, or other facility to customers to  
18 modify any aspect of the functioning described in the claim chart of the Accused Set  
19 Top Products while deployed to customer premises.

20           398. Comcast directly infringes at least Claims 27, 28, 33, 36, 37, 41, 42, 47,  
21 50, and 51 of the '866 Patent by using, importing, selling, and/or offering for sale the  
22 Accused Set Top Products (for example, the Arris AX013ANM STB) and/or the  
23 Accused Services (for example, digitizing and selecting desired television channels  
24 from an input signal).

25           399. The use of the Accused Set Top Products by Comcast to, for example,  
26 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa  
27

28 <sup>20</sup> The original claim chart for this patent is located at DE 63.

1 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,  
2 or to, for example, test those products, constitute acts of direct infringement of at least  
3 Claims 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51 of the '866 Patent.

4 400. Comcast has known of or has been willfully blind to the '866 Patent  
5 since before, and no later than the date of, its acceptance of service of the original  
6 Complaint in this action on February 16, 2023.

7 401. Comcast has known of or has been willfully blind to the '866 Patent  
8 since before, and no later than the date of, its acceptance of service of the First  
9 Amended Complaint in this action on June 5, 2023.

10 402. Comcast has known of or has been willfully blind to the '866 Patent  
11 since before, and no later than the date of, its acceptance of service of Entropic's  
12 infringement contentions on September 15, 2023.

13 403. Comcast has known of or has been willfully blind to the '362 family, of  
14 which the '866 Patent is a member, no later than the day before [REDACTED]  
15 [REDACTED]

16 404. Comcast has known of or has been willfully blind to the '866 Patent  
17 since before the August 9, 2022 communication from Entropic.

18 405. Comcast has been aware that it infringes the '866 Patent since well  
19 before, and no later than the date of, its receipt of Entropic's August 9, 2022  
20 communication, attached as Exhibit 17. Since obtaining knowledge of the '866 Patent  
21 and its infringing activities, Comcast has failed to cease its infringing activities.

22 406. Customers and subscribers of Comcast infringe at least Claims 27, 28,  
23 33, 36, 37, 41, 42, 47, 50, and 51 of the '866 Patent by using the claimed system, at  
24 least during the use of the Accused Set Top Products.

25 407. Comcast actively induces customers' direct infringement. For example,  
26 Comcast actively induces infringement of at least Claims 27, 28, 33, 36, 37, 41, 42,  
27 47, 50, and 51 of the '866 Patent by providing the Accused Set Top Products to  
28 Comcast customers with specific instructions and/or assistance (including installation)

1 regarding the use of the Accused Set Top Products to infringe the '866 Patent in  
2 accordance with the ordinary course of operation through the provision of the  
3 Accused Services. For at least the above-listed reasons, Comcast aids, instructs,  
4 supports, and otherwise acts with the intent to cause an end user to use the Accused  
5 Set Top Products to infringe at least Claims 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51  
6 of the '866 Patent.

7 408. Comcast contributes to the customers' direct infringement. Comcast  
8 provides apparatuses, namely the Accused Set Top Products, that are used by  
9 customers to directly infringe at least Claims 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51  
10 of the '866 Patent.

11 409. The Accused Set Top Products have no substantial noninfringing uses.  
12 When an end user uses the Accused Set Top Products to receive the Accused  
13 Services, the end user directly infringes at least Claims 27, 28, 33, 36, 37, 41, 42, 47,  
14 50, and 51 of the '866 Patent. The Accused Set Top Products are especially made or  
15 especially adapted for use in an infringing manner.

16 410. Comcast's inducement of, and contribution to, the direct infringement of  
17 at least Claims 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51 of the '866 Patent is  
18 continuous and ongoing through acts such as providing the Accused Set Top Products  
19 to Comcast customers, which enables those customers to receive the Accused  
20 Services; Comcast's provision of the Accused Services; and technical assistance  
21 provided by Comcast for equipment it provides to its customers in support of the  
22 provision of the Accused Services.

23 411. Comcast's infringement of the '866 Patent is, has been, and continues to  
24 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights  
25 under the patent.

26 412. Entropic has been damaged as a result of the infringing conduct alleged  
27 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
28



1 Comcast's infringement, which by law cannot be less than a reasonable royalty,  
2 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

3 413. Entropic is aware of no obligation to mark any instrumentality with the  
4 '866 Patent in accordance with 35 U.S.C. § 287.

5 **COUNT VIII**

6 **(Infringement of the '206 Patent)**

7 414. Entropic incorporates by reference each allegation of the paragraphs  
8 above as if fully set forth herein.

9 415. Entropic served infringement contentions which included a claim chart  
10 for the '206 Patent on September 15, 2023.

11 416. The '206 Patent duly issued on July 26, 2022 from an application filed  
12 January 28, 2022, an application filed March 30, 2021, an application filed June 4,  
13 2019, an application filed October 24, 2017, an application filed November 23, 2015,  
14 an application filed February 10, 2015, an application filed August 8, 2013, an  
15 application filed April 19, 2010, and, *inter alia* a provisional application filed April  
16 17, 2009.

17 417. Entropic owns all substantial rights, interest, and title in and to the '206  
18 Patent, including the sole and exclusive right to prosecute this action and enforce the  
19 '206 Patent against infringers and to collect damages for all relevant times.

20 418. The '206 Patent generally describes receiving an input signal from a  
21 cable network, digitizing the entire input signal, selecting a plurality of desired  
22 channels from the digitized input signal without selecting any undesired channels, and  
23 providing the plurality of desired channels. A true and accurate copy of the '206  
24 Patent is attached hereto as Exhibit 15.

25 419. The '206 Patent is directed to patent-eligible subject matter pursuant to  
26 35 U.S.C. § 101.

27 420. The '206 Patent is valid and enforceable, and presumed as such, pursuant  
28 to 35 U.S.C. § 282.

1           421. Comcast deploys one or more of the Accused Cable Modem Products  
2 and Accused Set Top Products in connection with operating and providing the  
3 Accused Services.

4           422. The Accused Cable Modem Products and Accused Set Top Products  
5 deployed by Comcast to customer premises remain the property of Comcast while  
6 deployed.

7           423. The Accused Cable Modem Products and Accused Set Top Products  
8 operate while deployed in a manner controlled and intended by Comcast.

9           424. As set forth in the infringement contentions served on Comcast on  
10 September 15, 2023 (attached hereto as Exhibit 16),<sup>21</sup> Comcast has directly infringed  
11 and is infringing at least Claims 13, 14, 19, 21, 23, 25, 26, 31, 34, 35, 38, 39, 44, 47,  
12 and 48 of the '206 Patent by using, selling, and/or offering for sale the Accused  
13 Services through the Accused Cable Modem Products and Accused Set Top Products.

14           425. Each aspect of the functioning of the Accused Cable Modem Products  
15 and Accused Set Top Products described in the claim chart operates while deployed to  
16 customer premises in a manner controlled and intended by Comcast.

17           426. Comcast provides no software, support, or other facility to customers to  
18 modify any aspect of the functioning described in the claim chart of the Accused  
19 Cable Modem Products and Accused Set Top Products while deployed to customer  
20 premises.

21           427. Comcast directly infringes at least Claims 13, 14, 19, 21, 23, 25, 26, 31,  
22 34, 35, 38, 39, 44, 47, and 48 of the '206 Patent by using, importing, selling, and/or  
23 offering for sale the Accused Cable Modem Products (for example, the Technicolor  
24 CGM4140 cable modem), Accused Set Top Products (for example, the Arris  
25 AX013ANM STB), and/or the Accused Services (for example, digitizing and  
26 selecting desired channels from an input signal).

27  
28 <sup>21</sup> The original claim chart for this patent is located at DE 63.

1           428. The use of the Accused Services through the Accused Cable Modem  
2 Products and Accused Set Top Products by Comcast to, for example, demonstrate  
3 products in brick-and-mortar stores at 685 East Betteravia Rd., Santa Maria,  
4 California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436, or to,  
5 for example, test those products, constitute acts of direct infringement of at least  
6 Claims 13, 14, 19, 21, 23, 25, 26, 31, 34, 35, 38, 39, 44, 47, and 48 of the '206 Patent.

7           429. Customers and subscribers of Comcast infringe at least Claims 13, 14,  
8 19, 21, 23, 25, 26, 31, 34, 35, 38, 39, 44, 47, and 48 of the '206 Patent by using the  
9 claimed method, at least during receipt of the Accused Services utilizing, for example,  
10 the Accused Cable Modem Products and Accused Set Top Products (for example, the  
11 Technicolor CGM4140 cable modem).

12           430. The Accused Cable Modem Products and Accused Set Top Products  
13 have no substantial noninfringing uses. When an end user uses the Accused Cable  
14 Modem Products and Accused Set Top Products to receive the Accused Services, the  
15 end user directly infringes at least Claims 13, 14, 19, 21, 23, 25, 26, 31, 34, 35, 38, 39,  
16 44, 47, and 48 of the '206 Patent. The Accused Cable Modem Products and Accused  
17 Set Top Products are especially made or especially adapted for use in an infringing  
18 manner.

19           431. Entropic has been damaged as a result of the infringing conduct alleged  
20 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
21 Comcast's infringement, which by law cannot be less than a reasonable royalty,  
22 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

23           432. No apparatus claims of the '206 Patent are presently asserted.  
24 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

25           433. Comcast has known of or has been willfully blind to the '206 Patent  
26 since before, and no later than the date of, its acceptance of service of the original  
27 Complaint in this action on February 16, 2023.

1 434. Comcast has known of or has been willfully blind to the '206 Patent  
2 since before, and no later than the date of, its acceptance of service of the First  
3 Amended Complaint in this action on June 5, 2023.

4 435. Comcast has known of or has been willfully blind to the '206 Patent  
5 since before, and no later than the date of, its acceptance of service of Entropic's  
6 infringement contentions on September 15, 2023.

7 436. Comcast has known of or has been willfully blind to the '362 family, of  
8 which the '206 Patent is a member, no later than the day before signing the [REDACTED]  
9 [REDACTED]

10 437. Since obtaining knowledge of the '362 family, of which the '206 Patent  
11 is a member, and its infringing activities, Comcast has failed to cease its infringing  
12 activities.

13 438. Comcast's infringement of the '206 Patent is, has been, and continues to  
14 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights  
15 under the patent.

16 COUNT IX

17 (Infringement of the '275 Patent)

18 439. Entropic incorporates by reference each allegation of the paragraphs  
19 above as if fully set forth herein.

20 440. Entropic served an infringement contention claim chart for the '275  
21 Patent on November 3, 2023.

22 441. The '275 Patent duly issued on October 10, 2023 from an application  
23 filed September 30, 2022, an application filed July 12, 2022, an application filed  
24 January 28, 2022, an application filed March 30, 2021, an application filed June 4,  
25 2019, an application filed October 24, 2017, an application filed November 23, 2015,  
26 an application filed February 10, 2015, an application filed August 8, 2013, an  
27 application filed April 19, 2010, and, *inter alia* a provisional application filed April  
28 17, 2009.

1       442. Entropic owns all substantial rights, interest, and title in and to the '275  
2 Patent, including the sole and exclusive right to prosecute this action and enforce the  
3 '275 Patent against infringers and to collect damages for all relevant times.

4       443. The '275 Patent generally describes a wideband receiver system that  
5 digitizes an input signal, selects desired channels from the digitized signal, and  
6 outputs the selected desired channels for demodulation. A true and accurate copy of  
7 the '275 Patent is attached hereto as Exhibit 18.

8       444. The '275 Patent is directed to patent-eligible subject matter pursuant to  
9 35 U.S.C. § 101.

10       445. The '275 Patent is valid and enforceable, and presumed as such, pursuant  
11 to 35 U.S.C. § 282.

12       446. Comcast deploys one or more of the Accused Set Top Products in  
13 connection with operating and providing the Accused Services.

14       447. The Accused Set Top Products deployed by Comcast to customer  
15 premises remain the property of Comcast while deployed.

16       448. The Accused Set Top Products operate while deployed in a manner  
17 controlled and intended by Comcast.

18       449. As set forth in the infringement contentions served on Comcast on  
19 November 3, 2023 (attached hereto as Exhibit 19), Comcast has directly infringed and  
20 is infringing at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18, and 20 of the '275 Patent  
21 by using, selling, and/or offering for sale the Accused Services through the Accused  
22 Set Top Products.

23       450. Each aspect of the functioning of the Accused Set Top Products  
24 described in the claim chart operates while deployed to customer premises in a  
25 manner controlled and intended by Comcast.

26       451. Comcast provides no software, support, or other facility to customers to  
27 modify any aspect of the functioning described in the claim chart of the Accused Set  
28 Top Products while deployed to customer premises.

1       452. Comcast directly infringes at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18,  
2 and 20 of the '275 Patent by using, importing, selling, and/or offering for sale the  
3 Accused Set Top Products (for example, the Arris AX013ANM STB) and/or the  
4 Accused Services (for example, digitizing and selecting desired channels from an  
5 input signal).

6       453. The use of the Accused Services through the Accused Set Top Products  
7 by Comcast to, for example, demonstrate products in brick-and-mortar stores at 685  
8 East Betteravia Rd., Santa Maria, California, 93454; and 1145 N. H Street, Suite B,  
9 Lompoc, California 93436, or to, for example, test those products, constitute acts of  
10 direct infringement of at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18, and 20 of the  
11 '275 Patent.

12       454. Customers and subscribers of Comcast infringe at least Claims 1, 2, 5, 7,  
13 8, 10-12, 15, 17, 18, and 20 of the '275 Patent by using the claimed method, at least  
14 during receipt of the Accused Services utilizing, for example, the Accused Set Top  
15 Products.

16       455. The Accused Set Top Products have no substantial noninfringing uses.  
17 When an end user uses the Accused Set Top Products to receive the Accused  
18 Services, the end user directly infringes at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18,  
19 and 20 of the '275 Patent. The Accused Set Top Products are especially made or  
20 especially adapted for use in an infringing manner.

21       456. Entropic has been damaged as a result of the infringing conduct alleged  
22 above. Comcast is liable to Entropic in an amount that compensates Entropic for  
23 Comcast's infringement, which by law cannot be less than a reasonable royalty,  
24 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

25       457. Comcast has known of or has been willfully blind to the '275 Patent  
26 since before, and no later than the date of, its acceptance of service of Entropic's  
27 infringement contentions on November 3, 2023.

458. Comcast has known of or has been willfully blind to the '362 family, of which the '275 Patent is a member, no later than the day before signing the [REDACTED]

459. Since obtaining knowledge of the '362 family, of which the '275 Patent is a member, and its infringing activities, Comcast has failed to cease its infringing activities.

460. Comcast has known of or has been willfully blind to the '275 Patent since at least November 3, 2023, when Entropic served Comcast its infringement contention claim charts.

461. Comcast has been aware that it infringes the '275 Patent since well before, and no later than the date of, its receipt of Entropic's infringement contention claim charts served on November 3, 2023. Since obtaining knowledge of the '275 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

462. Comcast's infringement of the '275 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

463. Entropic is aware of no obligation to mark any instrumentality with the  
'275 Patent in accordance with 35 U.S.C. § 287.

## COUNT X

**(Infringement of the '438 Patent)**

464. Entropic incorporates by reference each allegation of Paragraphs 1  
through 349.

465. Entropic served an infringement contention claim chart for the '438 Patent on November 3, 2023.

466. The '438 Patent duly issued on January 9, 2018, from an application filed February 16, 2017, an application filed August 4, 2016, an application filed July 23, 2013, and, *inter alia* a provisional application filed July 23, 2012.



1       467. Entropic owns all substantial rights, interest, and title in and to the '438  
2 Patent, including the sole and exclusive right to prosecute this action and enforce the  
3 '438 Patent against infringers and to collect damages for all relevant times.

4       468. The '438 Patent generally describes a mechanism for determining  
5 communication parameters for communications between a cable modem termination  
6 system and cable modems. A true and accurate copy of the '438 Patent is attached  
7 hereto as Exhibit 20.

8       469. The '438 Patent is directed to patent-eligible subject matter pursuant to  
9 35 U.S.C. § 101.

10       470. The '438 Patent is valid and enforceable, and presumed as such, pursuant  
11 to 35 U.S.C. § 282.

12       471. Comcast deploys one or more of the Accused Cable Modem Products  
13 and Accused Set Top Products in connection with operating and providing the  
14 Accused Services.

15       472. The Accused Cable Modem Products and Accused Set Top Products  
16 deployed by Comcast to customer premises remain the property of Comcast while  
17 deployed.

18       473. The Accused Cable Modem Products operate while deployed in a manner  
19 controlled and intended by Comcast.

20       474. As set forth in the infringement contentions served on Comcast on  
21 November 3, 2023 (attached hereto as Exhibit 21), Comcast has directly infringed and  
22 is infringing at least Claims 1-5 and 9 of the '438 Patent, by using, importing, selling,  
23 and/or offering for sale the Accused Services.

24       475. Each aspect of the functioning of the Accused Cable Modem Products  
25 and Accused Set Top Products described in the claim chart operates while deployed to  
26 customer premises in a manner controlled and intended by Comcast.

27       476. Comcast provides no software, support, or other facility to customers to  
28 modify any aspect of the functioning described in the claim chart of the Accused

1 Cable Modem Products and Accused Set Top Products while deployed to customer  
2 premises.

3 477. Comcast directly infringes at least Claims 1-5 and 9 of the '438 Patent by  
4 using, importing, selling, and/or offering for sale the Accused Services, which utilize  
5 cable modem termination systems and/or converged cable access platforms that  
6 communicate with the Accused Cable Modem Products and Accused Set Top  
7 Products (for example, the Technicolor CGM4140 cable modem).

8 478. The use of the Accused Services by Comcast to, for example,  
9 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa  
10 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,  
11 or to, for example, test those products, constitute acts of direct infringement of at least  
12 Claims 1-5 and 9 of the '438 Patent.

13 479. Comcast has known of or has been willfully blind to the '438 Patent  
14 since before, and no later than the date of, its acceptance of service of, Entropic's  
15 infringement contentions on November 3, 2023.

16 480. Comcast has known of or has been willfully blind to the '682 family, of  
17 which the '438 Patent is a member, no later than the day before signing the [REDACTED]

18 [REDACTED]  
19 481. Since obtaining knowledge of the '682 family, of which the '438 Patent  
20 is a member, and its infringing activities, Comcast has failed to cease its infringing  
21 activities.

22 482. Comcast has been aware that it infringes the '438 Patent since well  
23 before, and no later than the date of, its receipt of Entropic's infringement contention  
24 claim charts served on November 3, 2023. Since obtaining knowledge of the '438  
25 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

26 483. Comcast's infringement of the '438 Patent is, has been, and continues to  
27 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights  
28 under the patent.

484. Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

485. No apparatus claims of the '438 Patent are presently asserted.  
Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

## PRAYER FOR RELIEF

WHEREFORE, Entropic requests that:

A. The Court find that Comcast has directly infringed the Patents-in-Suit and hold Comcast liable for such infringement;

B. The Court find that Comcast has indirectly infringed the Patents-in-Suit by inducing its customers to directly infringe the Patents-in-Suit and hold Comcast liable for such infringement;

C. The Court find that Comcast has indirectly infringed the Patents-in-Suit by contributing to its customers' direct infringement of the Patents-in-Suit and hold Comcast liable for such infringement;

D. The Court award damages pursuant to 35 U.S.C. § 284 adequate to compensate Entropic for Comcast's past infringement of the Patents-in-Suit, including both pre- and post-judgment interest and costs as fixed by the Court;

E. The Court find that Comcast willfully infringed the Patents-in-Suit, and increase the damages to be awarded to Entropic by three times the amount found by the jury or assessed by the Court;

F. The Court declare that this is an exceptional case entitling Entropic to its reasonable attorneys' fees under 35 U.S.C. § 285; and

G. The Court award such other relief as the Court may deem just and proper.

**JURY TRIAL DEMANDED**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Entropic hereby requests a trial by jury on all issues raised by this Complaint.

Dated: December 15, 2023

Respectfully submitted,

By: /s/ Christina Goodrich

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